Factors Affecting Satisfaction with Performance of Duties of Nurses in Canada

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Abstract

Nurse shortages are frequently experienced in the provincial health care systems of Canada. Nurses leave their profession due to dissatisfaction with their work environment: heavy workloads; constant cuts to health care funding; lack of professional development opportunities; high levels of job stress; and limited management support. In order to improve Satisfaction with Performance of Duties (SPD) of nurses, the environment in which they provide patient care needs to be improved. A hypothesized model was developed to find the factors associated with the SPD of nurses.

A cross-sectional study covering two similar sized Canadian health regions – Saskatoon and Halifax – was used to test the model developed. A self-reported survey was conducted for a sample of nurses (n=236) working at the health regions in Halifax and Saskatoon. A regression model was built to test the hypothesized model. The final model included only significant predictors of SPD and the control variable, Years in Practice. Significant predictors were: Hassles which explained 22.3% of the variance ($\beta = -0.102$, $p = 0.018$); Positive Attitude explained 22.8% of the variance ($\beta = 0.121$, $p = 0.007$); Unit Organization explained 11.9% of the variance ($\beta = 0.150$, $p = 0.004$); Leader Actions explained 2.1% of variance ($\beta = 0.123$, $p = 0.008$); Objective Culture explained 1.3% of the variation ($\beta = 0.131$, $p = 0.004$); Fulfillment explained 7.6% of variance ($\beta = 0.257$, $p = 0.000$); and Recognition explained 3.7% of the variation ($\beta = 0.281$, $p = 0.000$) (Table 4-10). The final model cumulatively explained 71.8% of the variation in SP which is considered a large effect (Cohen, 1988).

A Structural Equation Model (SEM) was also built to test whether the SEM adds value to the regression model. A multi-layer model was configured that adequately fit the data ($\chi^2 = 346.591$ with df =128 and p=.0000). The CFI was 0.916, NFI was 0.875, IFI was 0.917, GFI was 0.851 and the RMSEA was 0.086. SRMR was 0.069. Leadership was at the base of the model with paths leading to Unit Support, Distress and Culture with all three path coefficients being statistically significant at $p < .001$. Two of the three paths had strong coefficients Leadership to Unit Support ($\beta = 0.74$) and Leadership to Organizational Support ($\beta = 0.74$) but the third, Leadership to Distress was very weak ($\beta = 0.03$). An intermediate level appeared to exist with four paths from Unit Support to: Equity ($\beta = 0.37$), SPD ($\beta = 0.14$), QR ($\beta = 0.15$), and Distress ($\beta = - 0.25$); two paths from Distress to: Equity ($\beta = - 0.27$) and QR ($\beta = - 0.17$); and four paths

from Culture to: Distress (β = - 0.48), Positive Attitude (β = 0.41), SPD (β = 0.21) and Quality Ratings (β = 0.51). All ten intermediate level path coefficients were statistically significant at $p < .001$. An upper level also appeared to exist with a path coefficient from Positive Attitude to Equity (β = 0.46) and a path coefficient from Equity to SPD (β = 0.74). Finally, a very weak path appeared to connect the two dependent variables from QR to SPD (β = 0.01). The upper level paths were also significant with $p < .001$.

The evidence from this study provided insight into factors associated with the SPD of nurses. Theory-driven strategies to manage the work environment of hospitals to improve SPD of nurses have potential to alleviate projected nursing shortages; thus ensuring an experienced and satisfied nursing workforce in hospitals.

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And most importantly, I say “Oh give thanks to the Lord, for he is good, for his steadfast love endures forever!” (Psalm 107:1)

Dedication

Dedicated to the fond memories of my late parents, Mr. Thekkekara Poulose Chacko and Mrs. Mary Chacko Thekkekara

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List of Abbreviations

Actions of Leaders (LAction).

ALead4 (Leader Actions)

Behavioural Culture (BehCult)

Canadian Federation of Nursing Unions (CFNU)

Canadian Institutes of Health Research (CIHR)

Canadian Nurses Association (CNA)

Capabilities of Personnel (Q-Personnel)

Capital District Health Authority (CDHA)

Cerebro-Vascular Accident (CVA)

CFI (Comparative Fit Index)

Confirmatory Factor Analysis (CFA)

Continuing Professional Education (CPE)

Co-principal investigators (Co-PIs)

Daily distress (DD)

Dependent variable (DV)

EQUIT (Equity)

Fulfil6 (Fulfillment)

Full time equivalents (FTE)

GFI (Goodness of Fit Index)

Hassles5 (Hassles)

IFI (Incremental Fit Index)

ILead4(Leader Integrity)

Independent variables (IV)

Institute of Healthcare Improvement (IHI)

Integrity of Leaders (LIntegrity);

Leadership (L)

Licensed Practical Nurses (LPNs)

Maximum Likelihood estimation (ML)

Moral4 (Moral Distress)

Myocardial Infarction (MI)

National Health Service Program (NHS)

NFI (Normed Fit Index or Bentler-Bonett Index)

Number of cases (n)

Number of independent variables (m)

Objective Culture (ObjCult)

Organization of the Unit (UnitOrgn);

Organizational culture (OC)

Organizational support from unit (US)

Payeq5(Pay Equity)

PostAt4 (Positive Attitude)

Professional development (PD).

Professional equity (PE)

Qinfra (Quality of Infrastructure)

QPeople (Quality of People)

Quality Rating (QR)

Quality Workplace– Quality Healthcare Collaborative (QWQHC)

Recog7 (Recognition)

Registered Nurses (RNs)

Releasing Time to Care (RTC)

RMSEA (Root Mean Square Error of Approximation)

SRMR (Standardized Root Mean Square Residual)

Robert Wood Johnson Foundation (RWJF)

SAPerf6 (Satisfaction with performance of Administrative Duties)

Saskatoon Health Region (SHR)

Satisfaction with Administrative Duties (SAdm)

Satisfaction with Clinical Duties (SClin)

Satisfaction with Performance of duties (SPD)

SCPerf7 (Satisfaction with performance of Clinical Duties)

Structural equation model (SEM)

The Productive Ward: Releasing Time to Care (PW-RTC)

Transforming Care at Bedside (TCAB)

Unit support (US)

UnitDev3 (Unit Development)

Unitorg4 (Unit Organization)

UnitSup (Unit Support)

Values of Leader (LValues)

Variance Inflation Factor (VIF)

VLead3 (Leader Values)

Xhaust7 (Exhaustion)

Years in Practice (YP)

Chapter 1.0: Introduction

Preface

The nursing profession looks after the well-being of a large number of people, often when they are vulnerable and afraid. Therefore, it is important that nurses are prepared and able to provide the best possible care. Nurses are the largest group of professionals within health care organizations, delivering most of the care received by patients (Force & Strelioff, 1999). Registered nurses represent nearly half (48%) of the health care work force in Canada (CIHI, 2018). The increasing need for health care services by a growing and aging population places high demands on the nursing profession (Statistics Canada, 2017). The capacity of nurses to deliver high quality health care services depends on the acquisition of both necessary knowledge and technical skills, combined with professional commitment to their work and fulfillment and gratification derived from it (Nahm, 1940; Ball et al., 2017; Pineau Stam, Laschinger, Regan & Wong, 2015; Fallatah & Laschinger, 2016; Price, Hall, Murphy & Pierce, 2018; Lepnurm, Dobson, Peña-Sánchez & Nesdole, 2015). Over the last decade nursing shortages have become chronic in both industrialized and developing countries (Lu, While & Barriball, 2005; Nei, Snyder & Litwiller, 2015; Rosseter, 2014; Richardson, 2018) and retention of nurses has become a global issue (Kingma, 2001; World Health Organization, 2006a,b; Marć, Bartosiewicz, Burzyńska, Chmiel & Januszewicz, 2018).

Evaluating the consequences of nursing shortages on patient safety and care quality is a complex challenge because quantitative economic models do not capture the collective decisions or the aggregated choices of individual nurses (Buchan, 2002; Hayes et al., 2006). Furthermore, marital status, the presence of young children and the economic status of their partner influences the employment choices of nurses to work, full or part-time.

Despite incentives promoted at Federal and Provincial levels of government, the Canadian Nurses Association (CNA) predicts that shortages of registered nurses will continue to rise to approximately 60,000 by 2022 or about 1/5 of the total population of registered nurses (Canadian Nurses Association, 2009). American studies have also demonstrated that poor job satisfaction leads to higher turnover rates exacerbating nursing shortages (Cox, Willis & Coustasse, 2014). British studies show that leadership and management of stress influence job satisfaction and turnover rates of nurses. More detailed studies demonstrate that the work environment influences

intention to leave the profession or to seek employment in another health care organization (Coomber & Barriball, 2007; Marć et al., 2018; Abhicharttibutra, Kunaviktikul, Turale, Wichaikhum & Srisuphan, 2017).

In recent years, World Health Organization documented the important contributions of nurses to decreases in patient morbidity and mortality and to the financial stability of the communities where their patients reside (World Health Report, 2016). Health care systems in every country have been affected by increasing emphasis on cost-effectiveness resulting in shorter length of stay in hospitals, with convalescence at home supported by family members, due to greater numbers of patients with chronic and often degenerative medical conditions (Mrayyan, 2006; Williams et al., 2017).

The pressures on health care systems have influenced job satisfaction of nurses (Al-Hamdan, Manojlovich & Tanima, 2017; Regan, Laschinger & Wong, 2016; Shamian, Kerr, Laschinger & Thomson, 2016). A nurses' tendency to leave is most significantly related to pay, opportunities for promotion, workload, stress (Zeytinoglu et al., 2007; Flinkman & Salanterä, 2015) and secondarily related to satisfaction with their supervisor and organization (El-Jardali, Dimassi, Dumit, Jamal & Mouro, 2009).

Satisfaction with performance of one's professional duties is an integral component of overall career and job satisfaction among nurses. Job satisfaction is important to all stakeholders involved in health; patients and their families; employees of health care organization and their managers, professional associations and unions. Most importantly, the job satisfaction of nurses influences patient care and safety (Boamah, Laschinger, Wong & Clarke, 2018). Job satisfaction is an assessment by the worker of various aspects of the work that they do in the position that they hold in both an overall sense: whether or not they like the nature of their work; and of the details of their position, individual aspects such as specific duties or supervision of their work (Spector, 1997). However, job satisfaction not only considers current duties, policies and supervision but also includes fufilment of an individual's expectation of their job (Lu et al., 2005; Khamisa, Oldenburg, Peltzer & Ilic, 2015; Boamah, Read & Spence Laschinger, 2017).

1.1 Background

Job satisfaction has been extensively studied (Spector, 1997) due to its importance in influencing performance on the job, use of and possibly abuse of sick time and remaining committed to the

job (Alegre, Mas-Machuca & Berbegal-Mirabent, 2016). The seminal work of Maslow (1943; 1954) suggested that human needs consist of a Hierarchy of Needs progressing in order from physiological needs, safety, affiliative needs, respect or esteem to self-actualization. Then, the emphasis of job satisfaction research moved from fulfilment of needs to examining cognitive processes and attitudes (Spector, 1997). A competing perspective suggested that needs did not have to be met in a hierarchical order, rather a worker could be at once, satisfied with some aspects of a job and dissatisfied with other aspects.

The two factor Motivation-Hygiene theory of Herzberg (1959) as cited in Miner (2005) hypothesized that satisfaction and dissatisfaction were two independent concepts. Satisfiers or Motivating factors could be: the nature of the work itself, achievement, fulfilment, responsibilities and recognition for effort; while Dissatisfiers or Hygiene factors could be: pay, working conditions, supervision, interpersonal relationships, administration and company policy. Herzberg's Motivation Hygiene theory has gained more acceptance than Maslow's Hierarchy of Needs (Brenner, Carmack & Weinstein, 1971; Pardee, 1990; Gawel, 1997).

Vroom's Valence-Instrumentality-Expectancy theory states that the motivation to act is predicated by multiplying valence with instrumentality times expectancy (Vroom, 1964). More recent theories such as Motivation 3.0 proposed by Daniel Pink (2011) in his book "Drive" describes three types of motivation: *"mastery", "autonomy"* and *"purpose"*.

Kanter articulated the theory of empowerment as employees as valuable even essential to the functioning of their organization. Many researchers have applied the concept of empowerment to the practice of nursing, especially to nursing leadership as various types of collaborative governance models (Kanter, 1993; Honold, 1997; Regan, Laschinger & Wong, 2016; Bawafaa, Wong & Laschinger, 2015). Recent researchers described the intrinsic desires to pursue interesting and absorbing careers which can be fulfilling when employees work in an environment that provides autonomy, mastery and purpose or plainly expressed, *"employees recognize what they must do, how they must do it and who they do it with"* (Kure, Franklin, Pierce & Smith, 2018).

1.2 Factors affecting job satisfaction of nurses

Most studies of job satisfaction among nurses identified a great variety of contributing factors including: working environment, variety of work, work load, job requirements, organizational

policies, supervisor and mentor support, interpersonal communication and collaboration, professional practice and autonomy, opportunities for advancement, respect or status, recognition, work-life balance, pay and fairness (Sengin, 2003; Knoop, 1994).

The two seminal meta-analyses of Blegen (1993), and Irvine and Evans (1995) laid the foundation for satisfaction with nursing careers, finding that stress, organizational commitment, and relations with leaders were the strongest predictors of job satisfaction. Subsequent researchers examined specific aspects of nursing practice. Lu, Barriball, Zhang and While (2012) meta-analyis and a recent literature review by Lu, Zhao & While (2019) found job satisfaction among hospital nurses was related to: the organizational environment and working conditions; perceptions of the job, role conflict, ambiguity; commitment to the professionn; stress on the job; supervision and communications with employees; recognition and expressions of appreciation of its employees; provision of opportunities for personal growth and promotion along with pay, fringe benefits and security.

Australian researchers reviewed job satisfiers for nurses in hospital settings, identifying 44 concepts which were grouped into *"three clusters; intra-, inter- and extra-personal"*. The most important factors of job satisfaction were found to be: autonomy, collaboration between peers, coping strategies, relations with their managers, organizational policies, adequate resources, gratification from providing direct patient care and opportunities for professional growth (Hayes, Bonner & Pryor, 2010).

Studies of job satisfaction have not considered "Satisfaction with Performance of Duties" (SPD) independently. Satisfaction literature indicates that: distress, organizational culture, leadership, unit and organizational support, professional equity, the physical environment and co-workers are key factors contributing to nurse SPD.

1.2.1 Daily distress

Nursing is considered a stressful occupation due to: exposure to human suffering, long working hours, shift rotations over 24 hours including weekends and holidays, physical demands, inadequate staffing and interpersonal interactions (McGrath, Reid & Boore, 2003; Gelsema et al., 2006; Nowrouzi et al., 2015) . Many nurses provide care to patients suffering from severe illness, some of them dying, on a daily basis and so nursing is stressful work (Shen et al., 2005; Sveinsdóttir, Biering & Ramel, 2006; Hayes, Douglas & Bonner, 2015). Many studies of

specific health professionals demonstrated that: social workers, medical technicians, radiation technologists, physicians and both registered and licensed practical nurses, experience negative effects from stressful work environments (Johnson et al., 1995; Tyler & Cushway, 1998; Kirkcaldy & Martin, 2000; Gellis, 2002; Blau, Tatum & Ward-Cook, 2003; French, 2005; Wu, Zhu, Wang, Wang & Lan, 2007; Schaufeli & Maslach, 2017). Most importantly, job satisfaction is impacted by job related stress (Fox, Dwyer & Ganster, 1993; Leveck & Jones, 1996; Fasbender, Van der Heijden & Grimshaw, 2018).

Nurses experience more stress-related problems such as: burnout, use of sick-days and high turnover rates compared to general work force (Clegg, 2001; Kirkcaldy & Martin, 2000). In an Australian study, people working in Health and Community Services (HCS) had high levels of distress compared to the general population (Dollard, LaMontagne, Caulfield, Blewett & Shaw, 2007). Furthermore, occupational stress appears to be related to environmental and personal factors (Kawano, 2008; Elfering, Grebner, Gerber & Semmer, 2008; Evans & Steptoe, 2002). Stress at work impacts job satisfaction for hospital employees and can cause hostility toward co-workers, increased use of sick days, excessive turnover, and ultimately causes reduction in both productivity and quality of care provided to patients (Mosadeghrad, Ferlie, & Rosenberg 2011).

Conceptually, high stress from job complexity and conflicts between work and family obligations leads to burnout, and burnout influences the decision to leave the organization or even the profession. The intention to leave, for some escalates to quitting and when many do so, results in serious turnover which costs hospitals thousands of dollars to cover recruitment, orientation and training expenses. Turnover also may result in poor quality of patient care and higher probability of medical errors. A 2015 meta-analytic study concluded that leadership support, rewards, recognition, team cohesion, effective communication and organizational commitment are the strongest predictors of retention until people are genuinely ready to move on in their careers (Nei, Snyder and Litwiller 2015).

Leiter and Maslach (2009) defined work-life in terms of: manageable workload; fair treatment; control over work; a sense of community; congruence between personal and organizational values; and appropriate rewards. A ‘manageable workload’ is the accumulated physical and emotional requirements of a job that an employee is able to accomplish in time allotted during a workday using the resources and tools available. ‘Fairness’ is the extent to which managerial

support and decision-making processes at work are perceived by employees as being objective and impartial in the organization. 'Control' refers to the authority of an employee to make decisions related to the work, including accessing necessary resources. 'Community' is the nature of the relationships at work with managers and colleagues. 'Values' reflect priorities and ethics of the individual employee and of the organization where the employee works. Finally, 'Rewards' are the extent to which the instrinsic and extrinsic expectations of the employee are fulfilled. (Schaufeli, Leiter & Maslach, 2009). Using the work-life model, Leiter and Maslach (2009) showed that congruence of values predicted the dimensions of burnout: fatigue, emotional exhaustion and depersonalization; however, excessive workload only predicted fatigue. Further, control over work predicted: fair treatment; a sense of community and reward expectations. Most importantly, burnout predicted intention to leave (Leiter & Maslach, 2009).

More recently, Aiken, Sloane, Bruyneel, Van den Heede, and Sermeus (2012) and Aiken et al. (2014) showed that staffing inadequacies influence higher burnout rates among nurses and negatively impact outcomes of patient care. Related studies demonstrated that excessive workloads combined with inadequate staffing lead to increased burnout rates, decreased job satisfaction and lower retention of new graduate nurses (Pineau et al., 2015) and negatively impact quality of patient care (Laschinger & Fida, 2015).

1.2.2 Organizational culture

Organizational culture is described conceptually by Langton, Robbins and Judge (2013) as *"A system of shared meaning held by members of that distinguishes the organization from other organizations"*. Organizational culture has been described in operational terms as a mechanism that directs employee behavior through shared values and norms communicated by stories, myths and practices specific to the organization (Weick, 1987; Chatman & Jehn, 1994; O'Neill, Beauvais & Scholl, 2016). A sense of shared values that is widely accepted and adhered to by the employees of an organization is important because they influence employee behaviour through mutual understanding and coordination of activities carried out by employees (Hofstede, 1988; Martins & Terblanche, 2003; Manojlovich & Ketefian, 2016). The culture of a health care organization influences the working environment of nurses (Park & Kim, 2009; Gifford, Zammuto & Goodman, 2002), and facilitates the capacity of the health care organization in adapting to changes imposed by society and stakeholders (Shortell, Levin, O'Brien & Hughes,

1995). A constructive organizational culture promotes constructive interactions leading to high employee satisfaction and positive organizational outcomes (Meterko, Mohr & Young, 2004; Mulcahy & Betts, 2005). In summary, positive organizational cultures in health care are associated with high employee satisfaction, autonomy, lower rates of burnout, higher productivity, and lower levels of stress experienced by employees, fewer health complaints by employees and fewer untoward incidents affecting the safety of patients (Szara, Ksykiewicz-Dorota, Klukow & Lamont, 2018).

1.2.3 Organizational leadership and support

A very popular definition of leadership provided by Shortel and Kaluzny (2006) is: "*Leadership is a process through which an individual attempts to intentionally influence human systems in order to accomplish a goal"* This is a very concise definition with bare essentials agreed by most scholars in the field (Shortell & Kaluzny, 2006). Leadership and support are positively related to career satisfaction. The behaviour of leaders in supporting organizational units directly affects the commitment of employees to the organization and their job satisfaction (Chiok Foong Loke, 2001; Erdogan, Kraimer & Liden., 2004; Mahmoud, 2008) and for nurses, organizational commitment keeps them from leaving (Wagner & Huber, 2003).

While organizational culture is conceptual in nature resting on beliefs, organizational support is material in nature resting on specific issues: favourable working conditions; fair processes and decisions; feedback from supervisors; and rewards; and Perceptions of Organizational Support depend on employees beliefs that the organization that they work for will satisfy their expectations for rewards, social and emotional needs in return for at least adequate performance of duties and commitment to the organization (Rhodes & Eisenberg, 2002).

Many studies nurses have demonstrated the influence of working conditions and social environment on nurses' commitment to the organization and intention to leave their jobs and because poor work environments are common in health care systems many nurses leave the profession entirely (El Akremi, Colaianni, Portoghese, Galletta & Battistelli, 2014; Chang, 2015; Aiken et al., 2011). Furthermore, lack of organizational support at senior and unit support at operational managerial levels contributes to job dissatisfaction, increased burnout and reduced quality of care (Aiken, Clarke, Sloane, Sochalski & Silber, 2002; Gunnarsdottir, Clarke, Rafferty & Nutbeam, 2007; Kane, Shamliyan, Mueller, Duval & Wilt, 2007;

Needleman, Buerhaus, Mattke, Stewart & Zelevinsky, 2002; Tourangeau & Cranley, 2006; Vahey, Aiken, Sloane, Clarke & Vargas, 2004).

1.2.4 Professional equity

There are two main principles in equity theory, exchange and comparison. With respect to exchange, there is a need for balance between the efforts or inputs, of the employee in return for rewards, or outputs; and with respect to comparison, employees compare fairness of treatment among peers with respect to rewards received in exchange for their efforts. 'Inputs,' are what employees give to their organization: time, effort, skill, personal sacrifice, enthusiasm; along with flexibility, tolerance, loyalty, and trust in superiors. 'Outputs' consist of tangible factors of: salary, security and employee benefits; and intangible factors: recognition, sense of achievement and respect (Adams, 1963).

The tangible output for employees, especially unionized employees is commonly referred to as their compensation package and is an essential aspect of human resources management. Bryant and Allen (2013) supported an association between compensation and employee commitment; however, commitment to remain with an organization is not the same as satisfaction with the job (Terera & Ngirande, 2014). Many studies of nurses have found that work environment played a larger role than wages and benefits in retention of staff and quality of care (Andrews & Dziegielewski, 2005; Spetz & Adams, 2006; Buchan & Aiken, 2008).

People's needs are different due to both personality disposition and their living circumstances; thereby generating many, often competing theories, describing what motivates people. The two classics are: Maslow's Hierarchy of Needs (1943) and Herzberg's two factor or Motivation-Hygiene Theory (1959). Theories, especially relevant to health professionals emphasize professional growth (Alderfer, 1972; McClelland, 1987); and expectancies, highly relevant to achievement oriented professionals (Vroom, 1964; Locke, 1969; Borkowski, 2009; Shortell & Kaluzny, 2006; McShane, Tasa & Steen, 2018).

1.3 Study purpose and significance

This research aims to explore factors associated with satisfaction of performing duties by Canadian nurses in two very different medium sized cities: Saskatoon and Halifax. Nurses working in the stroke and cardiology departments were surveyed. Because the majority of nurses in Canadian hospitals are unionized, working hours, salaries and benefits, advancement

opportunities and salary increases are dictated by collective bargaining agreements. Therefore it is important to note that extrinsic factors which might affect SPD such as the extrinsic-hygiene factors (or job context factors) of the Herzberg's motivation-hygiene theory such as job security, salary, working conditions, career advancement and career development opportunities could not be easily modified by hospital leadership.

Due to limitations imposed on hospital management by collective bargaining agreements there is a need for hospital managers to gain a greater understanding of intrinsic factors which affect nurse SPD. The results of this investigation aim to support the development of both theory and evidence based strategies to improve nurse working environments in Canadian hospitals and support the delivery of quality patient care.

A large cross sectional study of 12 European countries and the USA by Aiken et al. (2012) demonstrated that despite differences in the health systems of all 13 countries, they all faced problems in: dis-satisfaction and burnout of nurses; patient safety, hospital accreditation issues; and quality of patient care. Furthermore, structural and managerial issues beset the hospitals of all 13 countries, evidenced by a laundry list of problems: poor working conditions; lack of unit support for nursing care, poor doctor-nurse relations, and insufficient nurse participation in decision making, that were significantly associated with patient satisfaction and the quality of patient care (Aiken et al., 2012). Not surprisingly, there is a chronic shortage of nurses in these and many other countries (Aiken et al., 2012).

This study will contribute to the evidence supporting the development of effective work environments in hospital settings. Particular focus will be given at the unit level to characterize the effect of organizational culture and leadership, daily distress, quality of infrastructure and colleagues. This information will be useful to numerous health care professionals and managers and will support the development of business related outcomes aimed at improving nurse work environments and general SPD. In addition, findings of this study can be used to expand current theories related to nurses' SPD.

1.4 Dissertation focus

Current and projected nursing shortages are a growing issue for hospital administrators and policymakers in charge of drafting public health policy. It is assumed that an increase in SPD will improve nurse retention in hospital settings and limit job turnover rates. Factors which affect

SPD of nurses identified in this study will guide healthcare administrators and professional associations in creating a collaborative and supportive work environment with infrastructure which is conducive to improved SPD. Work place conditions and how nurses interact in the conduct of their duties were investigated by use of surveys in two similarly sized health regions in Canada – one in Halifax from Atlantic Canada and the other from Saskatoon on Canadian prairies. The intent of this twin site study was to examine factors which support SPD of nurses using a newly developed questionnaire designed to focus on intrinsic and extrinsic factors affecting satisfaction with the performance of duties, without the influences of personal factors such as pay, promotion and career development on SPD. Salient issues and concepts involved in the study are elaborated in detail in the review of theory and current state of science of the literature in chapter two below.

Chapter 2: Literature Review and Theoretical foundations.

Preface

The foundational theory and empirical support for salient concepts involved in this dissertation are articulated in this chapter.

2.1 Job satisfaction

Job satisfaction is one of the most important aspects of organizational life (Spector, 1997) due to its inherent relationships with employee behaviours and actions encompassing performance of work, calling in sick and quitting the job (Schleicher, Hansen & Fox, 2011). Furthermore, job satisfaction has been widely investigated within several disciplines: industrial relations, management, organizational behavior, psychology, sociology and nursing. Job satisfaction means many things to different people and can change over the duration of work-life. According to the Cambridge Business English Dictionary, job satisfaction is defined as: "*the feeling of pleasure and achievement that you experience in your job when you know that your work is worth doing, or the degree to which your work gives you this feeling*".

Locke envisages the importance of both "*effect and feeling*" and "*cognition or thinking*" (Locke, 1969; 1970). The level of job satisfaction of an employee is actually a product of the employee's perception of how well the employee is rewarded for their efforts (Luthans, Luthans & Luthans, 2011). Pilkington and Wood (1985) described job satisfaction of nurses their positive feelings for their job. The concept analysis of Castaneda and Scanlan (2014) applied to the nursing profession defined job satisfaction to be *"an affective reaction to a job that results from the incumbent's comparison of actual outcomes with those that are desired, expected, and deserved"*.

Geiger and Davit (1988) found that job satisfaction is intimately linked to self image in both hospital and non-hospital settings and found that job satisfaction is also related to the extent to which an employee's perceived needs are fulfilled by carrying out the tasks required in the job. In essence, job satisfaction is a multi-faceted phenomena comprising: pride in carrying out tasks at a high standard of quality; opportunities for growth; development of skills; expression of innovative ideas; making contributions to one's chosen profession; peer recognition for efforts to overcome challenges; collegial associations with other professionals; and the autonomy to carry out work within the scope of practice (Lepnurm, Dobson, Stamler, Persaud, Keegan &

Brownbridge, 2012; Asegid, Belachew & Yimam 2014).

2.1.1 Theories and models related to job satisfaction

There is a significant overlap between theories of motivation and job satisfaction. The seminal work of Maslow (1954) articulated human needs from work to be a five-level hierarchy composed of: physiological needs, safety, affiliative relationships, esteem and self-actualization. Although Maslow's hierarchy of needs has endured over 60 years, empirical support is limited (Alderfer, 1972 as cited in Borkowski 2009). More recently, research on job satisfaction has moved away from fulfilling underlying needs towards attitudinal perspectives and cognitive processes (Spector, 1997).

Two classical theories of motivation are: Locke's (1970) pivotal Range of Affect Theory and Herzberg's (1959) Motivation-Hygiene Theory. Locke (1970) contended: to be satisfied in one's job means getting what is wanted and being dissatisfied means one is not getting what is desired from doing the job (Locke & Latham, 1990; Tietjen & Myers, 1998; Ashton-James & Ashkanasy 2008). Herzberg et al. (1959; 1966) as cited in Borkowski, 2009 recognized that jobs have both satisfying and dissatisfying aspects and thus developed the two factor Motivation-Hygiene theory. Moreover, satisfiers are independent of dissatisfiers. The aspects of achievement, recognition, responsibility and fulfillment were identified as job satisfiers; and salary, supervision, administrative policies, working conditions, inter-personal relationships were identified as dissatisfiers. Over the years, the Motivation-Hygiene theory of job satisfaction has gained greater acceptance in comparison to Maslow's Hierarchy of Needs (Spector, 1997; Stello, 2011; Borkowski, 2009). Furthermore, employees like and dislike different aspects of their job; and job satisfaction may consider summing up the positive and negative aspects of doing a job. Some nurses might might value autonomy most, whereas others might value collegial relationships most (Asegid et al., 2014).

Along attitudinal and cognitive lines, the Affective Event Theory developed by Weiss and Cropanzano (1996) asserts that affective reactions from doing one's job results in satisfaction. The Affective Event Model examines events which are experienced in performing one's job and then the cognitive and emotional reactions of employees and the resulting commitment to one's workplace and job satisfaction. Furthermore, work behaviours can be affected by an employee's mood and emotions, while cognitive behaviours predict job satisfaction (Weiss, Nicholas &

Daus, 1999; Mitchell, 2011). The Affective Event Theory is an important development in understanding the emotional experiences of employees in the workplace (Ashkanasy & Ashton-James, 2005; Schilpzand, De Pater & Erez, 2016). In an empirical evaluation of call centre agents it was found that positive and negative emotions are related to job satisfaction but they are clearly independent factors (Wegge, Dick, Fisher, West & Dawson, 2006).

Pragmatically, the nature of jobs themselves affects satisfaction with work. The Job Characteristic Theory developed by Hackman and Oldham (1976) identifies job tasks as motivating factors. A challenging job involving a variety of tasks motivates; whereas a repetitive and easy job de-motivates. In practice, job enrichment and job rotation improve job satisfaction. Furthermore, Hackman and Oldham (1976) contend that employee motivation is associated with three characteristics: Meaningfulness of work; Responsibility; and Supervisor feedback. In addition, Job Characteristic Theory recognizes that some employees are influenced by the need for professional growth while other employees do not feel the need for growth (Loher, Noe, Moeller & Fitzgerald, 1985). Then this model was extended to include pay, job security, co-workers and supervisor quality. These additions contributed greatly to our understanding of job satisfaction and employee motivation (Dodd & Ganster, 1996; DeVaro, Li & Brookshire, 2007; Connolly & Viswesvaran, 2000).

The nature of a job changes over time for most employees; therefore, the Acquired-Need theory suggests *"that an individual's specific needs are acquired over time and are influenced by their life circumstances"* (McClelland, 1987). An individual's motivation to perform various aspects of their job is affected by their: affiliative needs, fulfillment, achievement and power. The strength these specific needs vary by an individual's personality disposition (Schüler, Sheldon & Frohlich, 2010).

Victor Vroom's (1964) Expectancy Theory asserted that an employee's selection of choices is a "*desire to maximize pleasure and minimize pain*". Furthermore, Vroom stated that relationships between behaviour at work and goals desired can be explained by the individuals' personalities, skill sets, collective knowledge, experience and capabilities. Moreover, expectancy theory first prescribes that organizations link rewards directly to performance; second ensures that the rewards are desired by employees; and third deserved (Vroom, 1964). This theory has been well supported by empirical studies (Wanous, Keon & Latack, 1983; Tsui, Ashford, Clair & Xin

1995). According to Vroom (1964), the individual evaluates their motivational energies to pursue different alternative courses of action based on the individual's perception of probability of attaining the desired results. Vroom (1964) expresses these concepts by: Valence, Expectancy, and Instrumentality; valence is the degree of importance an individual places on a particular outcome, expectancy is "*a momentary belief concerning the likelihood that a particular act will be followed by a particular outcome*", and instrumentality is the belief that one's efforts will be rewarded. Vroom (1964) expressed that motivation, valence, expectancy and instrumentality are related to one another by equation 2.1:

Motivation = Expectancy * Instrumentality * Valence……..……..eq. 2.1

From a manager's perspective Vroom (1964) argued that employees will carefully analyze their options work and job behaviours and choose what they think will lead to the best possible rewards and outcomes. (Steers, Mowday & Shapiro, 2004; Vroom 1964).

Staw and Ross (1985) theorize that temporary emotional and cognitive states do not have as much influence than stable pre-dispositions and individuals pre-dispositions remain relatively constant over time (Judge & Larsen, 2001) and further, an individual's pre-disposition for a particular level of satisfaction remains relatively constant over time (Judge & Klinger, 2007). In addition, Judge, Locke, Durham and Kluger (1998) showed that *"self-esteem","self-efficacy", "emotional stability"* and *"locus of control"* contribute to how an individual sees themselves. Conversely, Kanter's (1993) Theory of Structural Empowerment focuses on the structure of an organization, rather than the personal traits of individuals. In essence, individuals have the power to accomplish meaningful work and those appropriately structuring working conditions, make this possible (Laschinger, Gilbert, Smith & Leslie, 2010). According to Kanter (1993), empowerment in the workplace provides employees with access to information, resources, professional development, and the opportunity to use skills; and these lead to better decisions which benefit the organization. Kanter's (1993) theory focuses on structural factors of an organization that facilitate healthy work environments for employees and their commitment to the organization (Hagerman' Hogberg, Skytt, Wadensten, & Engström, 2017).

Employees reporting to managers with the authority to make structural improvements are more

likely to feel empowered (Haugh & Laschinger, 1996). Many studies have demonstrated a strong relationship between structural empowerment and job satisfaction (Lautizi, Laschinger & Ravazzolo, 2009; Wong & Laschinger, 2013; Laschinger, Wong & Grau, 2013). Kanter's theory has been widely applied to nursing practices (Kluska, Laschinger & Kerr, 2004; Mangold et al., 2006; Manojlovic, 2007; Greco, Laschinger & Wong, 2006; Larkin, Cierpial, Stack, Morrison & Griffith, 2008; Wong & Laschinger, 2013).

Many studies have found that autonomy is a key predictor of job satisfaction in nursing practice (Sasbiston & Laschinger, 1995) and empowerment is a mediator of job satisfaction and distress. Empowerment and its relation to job satisfaction and various organizational outcomes has been extensively examined by human resource researchers (Conger & Kanungo, 1988; Donovan, 1994; Bowen & Lawler 1992; Spreitzer, 1995a, 1995b; Erkutlu & Chafra, 2012).

Organizational researchers extended the work of Kanter (1993) articulating Spreitzer's dimensions of psychological empowerment within the workplace (Thomas & Velthouse, 1990; Sprietzer 1995a, b; 1996, Sprietzer 2007). Laschinger, Finegan, Shamian and Wilk (2001) expanded Kanter's model to include Spreitzer's (2007) four dimensions of empowerment with the work environment: autonomy, influence on the organization, meaningfulness of the job and self-efficacy. These dimensions affect employees' work attitudes and behaviours (Laschinger, Finegan, Shamian & Wilk., 2001;2003;2004; Chang, Shih & Lin, 2010; Manojlovich, 2007; Faulkner & Laschinger, 2008).

2.1.2 Factors affecting job satisfaction of nurses

The meta-analysis of Whitman, Van Rooy and Viswesvaran (2010) combining 60 studies of 230,000 employees in 5,848 units found that job satisfaction performance was positively correlated with performance of job duties. Therefore, it is important for those who manage nurses to understand job satisfaction as it directly affects patient care and retention of nurses (Laschinger, Leiter, Day, & Gilin, 2009; Price & Mueller, 1981; Irvine & Evans, 1995; Cotton & Tuttle, 1986; Weisman, Dear, Alexander & Chase, 1981; Lum, Kervin, Clark, Reid & Sirola, 1998). According to Wong and Laschinger (2013) the meta-analyses of Blegen (1993) and Irvine and Evans (1995) established the importance of effective supervisory communications, satisfactory relations between staff nurses with their nursing leaders, and job satisfaction.

Beyond the nature of the nursing itself, the systematic review by Lu, While and Barriball (2005)

found that job satisfaction in the nursing profession was associated with: the nature of the organization as employer, its policies and procedures; supervision and communications with employees; recognition and expressions of appreciation of its employees; provision of opportunities for personal growth and promotion along with pay, fringe benefits and security. In their subsequent systematic review, Lu, Barriball, Zhang and While (2012) found job satisfaction among hospital nurses was related to: the organizational environment and working conditions; perceptions of the job, role conflict, ambiguity; commitment to the profession and the organization; and stress on the job. These findings were also confirmed by the recent literature review by Lu, Zhao and While (2019).

The meta-analysis of Blegen (1993) of 48 empirical studies found that job satisfaction was most negatively correlated with stress and most positively correlated with organizational commitment and also identified seven moderately correlated factors: autonomy, communication with peers and supervisor, fairness, locus of control, recognition, and repetition of tasks. The demographic variables of age, years of experience, education and commitment to the profession were weakly correlated.

Leadership was found to have a direct impact on adequacy of resources, job performance and sense of accomplishment, emotional exhaustion and burnout (Ning, Zhong & Qiujie, 2009; Cicolini, Comparcini, & Simonetti, 2014) and work performance, patient satisfaction and service quality was found to be closely related to job satisfaction (Cortese, Colombo & Ghislieri, 2010).

The meta-analysis of Zangaro and Soeken (2007) involving 31 studies and 14,567 employees corroborated that job stress was most strongly correlated with job satisfaction followed by nurse–physician collaboration, and autonomy, pointing out the importance of improving working conditions to increase job satisfaction among nurses.

A more recent meta-analysis of 62 studies by Saber (2014) concluded that: job requirements, empowerment, control over work, autonomy and stress are moderate predictors of job satisfaction. The recent Laschinger and Fida study in Ontario (2015) surveyed nurses involved in direct care roles finding that: authentic leadership plays an important role in creating work environments that support effective nursing practice, resulting in higher perceptions of patient care quality by nurses and that greater job satisfaction is crucial to the retention of nurses.

For nurses in Canada, organizational commitment was found to be related to overall job

satisfaction (Knoop, 1994). A more detailed comparison of nursing in 12 European concluded that low salaries combined with heavy workloads and lack of opportunites for advancement were strongly correlated with job dissatisfaction (Aiken et al. 2012). The Australian study by Albion, Fogarty and Machin (2005) compared the perspectives of health care workers with respect to organizational climate and psychological outcomes, finding that nurses reported: less support from leaders; less participation in decision-making; lower role clarity; lower professional interaction; less recognition; less professional growth; lower congruence with organizational goals; yet higher work demands, than other health workers. Furthermore, nurses working in larger hospitals reported less favorable results than nurses working in smaller hospitals, and nursing working in mental health reported even less favourable attributes of organizational cultures and psychological outcomes (Albion et al., 2005). For hospital nurses, autonomy in the delivery of patient care and interpersonal relationships with other health care professionals were found to be the most influential factors affecting job satisfaction (Casteneda & Scanlan, 2014).

Kalisch, Lee and Rochman (2010) summarized the major factors affecting job satisfaction of nurses to be: job stress, adequate staffing, autonomy, collaboration with physicians, friendship with colleagues, support from management, opportunities for promotion, communication with supervisors, recognition, fairness, control over practice, and commitment to the profession. Longitudinal studies have found that autonomy and social integration most significantly influence motivation, job satisfaction and commitment to the organization (McCloskey, 1990; Blegen & Mueller, 1987). A recent literature review article by Hayes, Bonner and Pryor (2010) explored factors contributing to nurse job satisfaction, grouping the various studies conducted over several decades into "*intra-personal (those within the nurse), inter-personal (between the nurse and colleagues or patients) and extra-personal (those external to the nurse) groups… as a way to better understand job satisfaction…*".

However, the concept of Satisfaction with Performance of Duties (SPD) has not been explored independently. Adams and Bond (2000) considered job satisfaction to be *"the degree of positive affect toward a job or its components"*. Satisfaction with Performance of Duties (SPD) is a component of the wider concept of Job satisfaction. The concept of SPD is developed to study the performance component of job satisfaction by removing extrinsic factors postulated in the job satisfaction theories. Based on Herzberg's motivation-hygiene theory, extrinsic-hygiene factors (or Job Context factors) such as job security, salary, working conditions, career advancement and

career development opportunities contribute to the job satisfaction but are independent of SPD.

In Canada, the majority of hospital nurses are unionized; therefore, extrinsic factors cannot be easily altered due to highly restrictive collective bargaining agreements already in place. Therefore, modifying extrinsic factors which affect SPD are not easily undertaken. Therefore, to investigate factors influencing SPD, the 19 item Career Satisfaction scale of Lepnurm et al. (2012; 2007; 2006a; 2006b) was modified to assess SPD by removing six items related to the facets of earnings, career advancement, community activities and other personal issues. The 13 remaining items cover the majority of intrinsic facets of nurse job satisfaction which influence SPD: adequate resources, cohesiveness of the work group, motivation with work, task variety, autonomy, positive affect, interactions with physicians, interactions with management, nurse-patient relationship, unit administration, role clarity, career orientation, and self-image of performance. This short 13 item scale is easy to administer and increases the probability of getting well thought out responses from nurses when compared to longer versions of nurse job satisfaction surveys available.

The discussion of theories has demonstrated that the concepts of job satisfaction, leadership, organizational culture, unit support, distress, professional equity, physical environment and relations with co-workers affect “Satisfaction with Performance of duties” (SPD).

2.2 Model Hypothesis

Considering the state of science reviewed in the literature, this research study was designed to investigate factors which influence SPD among nurses working in Canadian hospital settings. While job satisfaction of Canadian nurses has been studied, the approach developed for this dissertation to assess SPD offers an alternative construct which removes the noise of extrinsic personal factors which limited interpretation of previous studies. A regression model is built to predict SPD by use of factors identified in the review. Based on the best available evidence, it was hypothesized that the factors daily distress (DD), organizational culture (OC), unit support (US), leadership (L), quality rating (QR) and professional equity (PE) would affect the SP of Canadian hospital nurses. In addition, a structural equation model (SEM) was built to further investigate the relation among SPD and job factors and to confirm or support the regression model. The SEM developed incorporated dimensions of factors to examine their specific effects on SPD.

2.3 Summary

In this chapter factors affecting SPD of nurses were identified by use of available evidence and included: DD, OC, US, L, QR and PE. Missing links in our current understanding of these factors affecting SPD of nurses and the need for advanced analytical methods such as SEM to investigate complex models were incorporated in this study. More details of analysis and methods to test model developed are detailed in the next chapter.

Chapter 3: Methods

Preface

The study design including rationale for the location, determinations of sample setting, frame and size are described in this chapter. In addition, data collection procedures are described in detail and methods used to measure selected variables are provided along with their psychometric properties. Data management procedures are discussed to provide information related to data integrity and missing values. Ethical approval processes and limitations in collecting data including mitigating techniques used to avoid biases are reviewed.

3.1 Project description and data collection

A twin-site, full census design was used to test the hypothesized model. This model was specifically chosen to identify factors affecting satisfaction with performance of duties among nurses in Canada by studying two university-based health regions of similar size within Canada – Saskatoon, Saskatchewan and Halifax, Nova Scotia. Regression modeling and structural equation modeling were used in this study. All nurses in the heart and stroke units within the two health regions were invited to participate. Data from all nurses who actually participated from the two units at the two health regions were used in the regression and structural equation modeling.

3.2. Sample Size calculations for the proposed analysis for modeling:

Regression modeling

Sample size calculations for regression modeling is done based on the two common rules of thump suggested by Green in 1991 as cited by Tabachnick & Fidell, 2014. Sample sizes for regression modeling are dependent on a number of factors including: *"desired power"," alpha level"," number of predictors"* and expected *"effect sizes"* (Tabachnick & Fidell, 2014). The guidelines used in regression modeling were: assumption of a medium-size relationship between independent and dependent variables, alpha value of 0.05, and Beta value of 0.20 (Green, 1991 as cited by Tabachnick and Fidell, 2014). Based on six independent variables (IVs) (i.e. predictors) to explain the dependent variable (DV) (i.e. Satisfaction with Performance of duties (SPD), the number of cases (*n*) is determined by use of equation 3.1, where *m* is equal to the number of IVs to be included in the regression model.

$50 + 8m = n$……eq. 3.1

Therefore;

$50 + (8*6) = n$

$98 = n$

When testing for correlations among a number of IVs, the number of cases is determined by equation 3.2.

$104 + m = n$…….eq. 3.2

Therefore;

$104+6 = n$

$110 = n$

Structural equation modeling (SEM)

The sample size for SEM is determined by use of empirical rules of measures recommended by various SEM researchers. Marsh and Yeung (1997) recommend four items per construct each of which have local (specific latent variable) and global (overall model) aspects. Nicolaou and Masoner (2013) suggested that a minimum absolute sample size is a practical necessity since underlying estimation theory is asymptotic. Lomax and Schumacher (2004) and, Boomsma and Hoogland (2001) recommend 100 observations and Hu and Bentler (1999) recommend a minimum of 250 observations. However, Bentler and Yuan (1999) identified new testing techniques specifically for SEM that produce sufficiently robust model estimates for as few as 60 subjects, as cited in Tabachnick and Fidell (2014). Similarly, two recent simulation studies demonstrated small sample sizes can be sufficient for SEM. Wolf, Harrington, Clark and Miller (2013) found sample size requirements of 30 and higher for simple Confirmatory Factor Analysis (CFA) with four indicators loadings of approximately 0.80. Sideridis, Simos, Papanicolaou and Fletcher (2014) found that sample sizes of 50-70 would be enough for a model to keep low Type-I error rates.

The N:q rule based on maximum likelihood estimation (ML) is a popular rule for determining sample size and model complexity and is the default method in most SEM computer programs (Jackson, 2003). *"In ML estimation, Jackson (2003) suggested that researchers think about*

minimum sample size in terms of the ratio of cases (N) to the number of model parameters that require statistical estimates (q)". The optimal sample size to parameters ratio recommended is 20:1, but a minimum of 10:1 is acceptable (Jackson, 2003). When the N:q ratio decreases to a value below 10:1, the trustworthiness of the results also approach to a minimal level. The online calculator provided by Soper (2017) was also used to calculate sample size assuming an effect size of 0.15, desired statistical power level of 0.8, number of latent variables 1 and number of observed variables 6 with a probability level of 0.05. The Soper's calculator estimated a recommended minimum sample size of 200.

Based on reviewing many field experiences Kline (2005) concluded that a minimum sample size of 200 is required for valid structural equation modeling. Subsequently, Hox, Maas and Brinkuis (2010) suggested that a sample size of 50 is sufficient when the investigation is primarily to seek factor loadings. Based on these approaches for determining sample size and considering the practical realities of the scope of this twin-site study, a combined sample size of 200 for the two sites was deemed to be adequate.

Exploratory Factor Analysis (EFA)

A good general rule of thumb for factor analysis is provided by Tabachnick and Fidell (2014) is 300 cases or a more a subject to item ratio of 10:1 suggested by Costello and Osborne 2005. Comrey and Lee (1992) as cited in Williams, Onsman and Brown (2010) provided the following guide for sample sizes *"– 50 as very poor, 100 as poor, 200 as fair, 300 as good and 500 as very good and 1000 as excellent"*. However, Gaudagnoli and Velicer (1998) and Velicer and Fava (1998) shown that solutions with several high loading marker variables (greater than 0.8) do not require as many cases (Velicer & Fava, 1998). Considering the rules of thumb above, it has determined that our combined sample size of 234 for both sites provided adequate sample size for the factor analysis.

3.3 Location of study and sample

Data were collected from nurses of the cardiology and stroke units of both Saskatoon and Halifax health regions, two medium sized urban university teaching hospitals. Upon receiving ethics approval from the University of Saskatchewan and Saskatoon Health Region, approval was also granted by the Capital District Health Authority in Halifax (Appendix A and B). Discussions were held with the division leaders of the cardiology and neurology departments of

both health regions. The division leadership included physicians, nurses and inter-professionals (the collective term used to represent physiotherapists, occupational therapists, social workers and other therapists). A champion was identified at both sites to review instruments and conduct surveys. Study coordinators were hired at both sites and worked with two co-principal investigators (Co-PIs) and champions selected at each site. Several presentations were made by the Co-PIs to the night and day cardiology and neurology physicians and staff at each site.

Separate survey packages were prepared for the cardiology and neurology (stroke) departments at each hospital (Appendix E and F). Each package contained a description of the study and associated objectives, an invitation to participate (Appendix A and B) that conformed to requirements as established by Tri-council Research Ethics, and the questionnaire itself. Nuances in questionnaire phrasing were determined by health region therefore terminology was slightly different between the questionnaires provided to the two hospitals. Separate questionnaires were developed for physicians, nurses and inter-professional staff from cardiology and neurology based on the Lepnurm et al. (2012) study of nurses and physicians in cardiology and neurology departments of the Saskatoon Health Region in 2009. Refinements of the original questionnaire were made for this study which was carried out in 2015.

Study champions piloted the questionnaire with small groups of nurses from their respective units to ensure that items were understandable and terminology appropriate. Prior to piloting the questionnaire with their own staff, the champions met with study coordinators and Co-PIs on several occasions in person followed by clarifications by e-mail and telephone to further develop draft questionnaires until everyone was satisfied.

The instruments were distributed on patient care units of cardiology and neurology at both sites. Most participants found time to complete the questionnaire during their respective shifts when questionnaire was received from the study coordinator. Some took their questionnaire home and then returned it completed on their subsequent shift. Participants returning completed questionnaires to the collection box placed in their unit received a small present to recognize their time and effort and were well received. The study coordinator worked with the nursing leaders of each unit to devise three questionnaire completion blitzes in conformity with the approach outlined by Dillman (2002; 2011) and described in the Nursing Working Environment Study by Lepnurm et al. (2012) such as;

- Include all staff documented in the respective units working half-time or more;
- Study coordinators at each site should act as custodians of the staff lists and assign each questionnaire a code number to ensure confidentiality of data;
- Questionnaires should be distributed by the study coordinators and returned to a collection box in the respective unit to protect privacy of participants, minimize interruptions of clinical duties and to be cost efficient.
- Immediate distribution of participation gifts (travel mugs) to participants by use of the honour system (by the third blitz the travel mugs were placed by the collection box).
- Study coordinators checked questionnaire collection boxes (Stanley Tool Boxes with a slot cut in the top, locked by padlock) every second day throughout the duration of the study, February to May, 2015).

3.4 Criteria for inclusion and exclusion of study participants

Study subjects for this research project consisted of nursing staff of the cardiology and stroke units of hospitals in the Saskatoon and Halifax health regions. All Registered Nurses (RN) and Licensed Practical Nurses (LPN) working at least half-time, for a minimum of one year, delivering patient care on the cardiology and stroke units were recruited to participate in study. Nurses were excluded if they were on: vacation, maternity leave, leave of absence, or suffering from an illness. Nurses with significant administrative duties were also excluded.

Overall, 371 nurses, 168 from Halifax and 203 from Saskatoon were included in the study and consisted of 317 RNs and 54 LPNs. In Halifax, 119 nurses returned completed questionnaires, for a response rate of 70.83%, and in Saskatoon, 117 nurses returned completed questionnaires for a response rate of (57.64%). In cardiology 128 nurses (59.53%) and 108 nurses in neurology (69.23%) returned completed questionnaires (Table 3-1). The overall response rate was 63.6% (62.77% for RNs and 68.51% for LPNs) (Table 3-1).

Table 3-1. Response rate of nurses by region and unit.

Region	Unit	Nurse designation	Number of Responses	Eligible	Response rate (%)
Halifax	Cardiology	RNs	66	98	67.35%
		LPNs	0	0	
		All Nurses	66	98	67.35%
	Stroke	RNs	32	42	76.19%
		LPNs	21	28	75.00%
		All Nurses	53	70	75.71%
Saskatoon	Cardiology	RNs	59	112	52.68%
		LPNs	3	5	60.00%
		All Nurses	62	117	52.99%
	Stroke	RNs	42	65	64.62%
		LPNs	13	21	61.90%
		All Nurses	55	86	63.95%
Total		All Nurses	236	371	63.61%
CDHA Nurses		(RN + LPN)*	119	168	70.83%
SHR Nurses		(RN + LPN)*	117	203	57.64%
Total		(RN + LPN)*	236	371	63.61%

*RN managers not included.

3.5 Description of health systems

The study sites were the health regions of Saskatoon and Halifax.

3.5.1 Saskatoon health region (SHR) (Sourced from Wikipedia)

At the time of the study, the SHR was the largest health region in the province of Saskatchewan and is the location of the only medical and largest nursing school. This region services

approximately 360,000 local residents in more than 100 cities, towns, villages, Regional Municipalities, and First Nation communities. The SHR is also a provincial referral centre, providing specialized care to people from across the province. SHR is an organization which provides services and programs to more than 70 facilities of which ten are hospitals (including three tertiary hospitals in Saskatoon), 29 are long term care facilities, and numerous primary health care sites, public health centres, mental health and addictions centres (Wikipedia SHR) Note: The regional health system is currently transition to form a single provincial health authority and officially launched on December 4, 2017.

3.5.1.1 Cardiology and stroke units

Medical and nursing care for 80% of heart attack or stroke victims within the SHR are provided by four units at the Royal University Hospital and the Rehabilitation Unit of the City Hospital. Initial admission is usually through the respective Emergency Departments, followed by transfer to the Coronary Care Unit, Acute Stroke Unit or Cardiac Care Unit. Smaller proportions of heart attack and stroke patients with less severe conditions are diagnosed and treated at St. Paul's Hospital. This study involved nursing staff from the Coronary Care, Cardiac Patient Care and Acute Stroke Care Units of Royal University Hospital. The catchment population covers the northern half of Saskatchewan (approximately 600,000 people).

3.5.2 Capital district health authority (CDHA) (Sourced from Wikipedia)

Out of a total of 9 health authorities the CDHA was the largest in the province of Nova Scotia. In 2015 it was integrated into the province-wide Nova Scotia Health Authority. CDHA was delivering essential health services in the Halifax Regional Municipality and in the Municipality of the District of West Hants, for a combined population of over 400,000 residents. This is approximately 42% of the provincial population of 953,869 (Statistics Canada 2018) 40% of the provincial population. The CDHA was also responsible for the advanced level specialized acute care to residents throughout Atlantic Canada as the largest teaching hospitals affiliated the Dalhousie university medical school are located within this health authority. Nearly 10,000 staff are employed within CDHA (Wikipedia CDHA).

3.5.2.1 Cardiology and stroke units

Medical and nursing care for 90% of heart attack or stroke victims within the CDHA is provided

at the Halifax Infirmary Site of the Queen Elizabeth Hospital. After initial admission and diagnosis in the Emergency Department, treatment for heart attack victims is provided in the Intermediate Care, Coronary Care or Cardiac Care Units. For stroke victims, treatment is provided in the Acute Stroke Unit and some patients continue to receive care on the Stroke Unit at the Nova Scotia Rehabilitation Centre. A small fraction of heart attack and stroke patients, those with less severe conditions are diagnosed and treated within the general medical floors at Dartmouth General Hospital. This study focused on heart attack and stroke care provided within the Halifax Infirmary where the vast majority of cases are treated. The catchment population covers the provinces of Nova Scotia and Prince Edward Island and part of New Brunswick (approximately 1,200,000 people).

3.6 Instrumentation

The Lepnurm et al. (2012) nursing questionnaire used in the Saskatoon Nursing Work Environment Study of 2009 was updated and refined for use in this twin site study. The process of refinement involved two steps; first the content of each of the dependent and independent variables was reviewed by the research team in collaboration with nursing managers at both sites; and second, the phrasing of each item was adjusted to use the appropriate clinical terminology for cardiology and neurology units and terminology used at the two health regions.

The questionnaires were reviewed by researchers of the MERCURi Research Group (A university of Saskatchewan based researchers from multiple faculties including public health, pharmacy and nursing) and funded by Canadian Institutes of Health Research (CIHR). The two nursing faculty on the research team assumed the greatest responsibility for conceptual content while psychometric experts ensured that concepts were properly measured. Similar variable structure to 2009 was used in 2015 since the relationships among the variables used in 2009 were strong (Lepnurm et al., 2012). The survey consisted of various measures prepared specifically for variables that are determined to be associated with SPD of nurses in Canadian hospital work environments. Satisfaction with Performance of Duties was treated as the dependent variable and all factors associated with SPD were treated as independent variables. The independent variables included' organizational culture (OC), organizational support for the unit (US), professional equity (PE), daily distress (DD), leadership (L) and quality Rating (QR). Refinements were then made to each of the variables in consultation with nursing leadership at both sites. The

refinement process consisted of several rounds of discussions between the researcher and small groups of staff at each site, and within each of the two clinical divisions. The refinement process proceeded variable by variable until the researchers and nursing leaders were satisfied with the questionnaires. The nursing questionnaires are presented in Appendix E and F.

Pre-testing was conducted with two groups of 4 or 5 nurses from each health region from the Cardiology or Neurology Divisions. Overall pre-testing was conducted by use of four groups consisting of four LPNs and 14 RNs. Collected data was entered into Microsoft Excel (2010) © and then uploaded into SPSS. Frequency distributions for each item were reviewed to ensure normality (slightly positive skews were expected). Negatively worded questions were reverse coded to ensure that subsequent factor analyses and reliability testing could be carried out. Basic SPSS programming for the latent constructs consisting of multi-item measures was done at pre-testing and maximum and minimum values of the pilot data set were checked to ensure responses were in line with the selected scale.

Following the pilot test, some refinements were required and the pre-test group of nurses was asked to complete a smaller questionnaire with just the revised items. Asking them to fill out a full second survey was considered but rejected due to their time constraints.

3.7 Establishment of measurement scales

Because all variables were measured by use of psychometric scales and selected from a previously validated questionnaires designed for a similar population, the use of factor analyses and reliability testing was deemed appropriate (Tabachnick & Fidell, 2014). Exploratory Factor Analysis (EFA) using principal components method of analysis and select factors that have eigenvalues over 1 as our criteria with varimax rotation was used to verify that new items added to existing scales contributed to overall explanation and that factor structures of refined measures were consistent with the original measures. Next, Cronbach's reliability was used to test internal consistency of factors within each measure. Since some new items were developed for several of the variables, internal consistency was expected to increase for the factors and some new factors were expected to emerge.

The traditional procedure to validate measures is by comparison of results of a newer measure with the results of an older more established measure; however, such studies require respondents to answer a battery of similar items twice and only a few measures can be tested at any one time

to avoid respondent fatigue (Lavarkas, 2008, Ben-Nun 2008). A more common procedure is to compare the factor structures and reliability analyses of sub-sets within the same dataset, but caution must be exercised to ensure that sub-populations are of sufficient size. Exploratory Factor Analysis usually considered as a large sample size technique with a sample size of 50 as absolute minimum (De Winter, Dodou & Wieringa 2009). Comrey and Lee as cited in Tabachnick and Fidell 2014, considered *"sample sizes of 50 as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent"*. For factor analysis, 300 cases are considered sufficient (Tabachnick & Fidell 2014). For assessment of reliability, Cronbach's alpha values of .800 or more are considered highly reliable, over 0.700 as good and over 0.600 as acceptable for sub-scales. George and Mallery (2003) as cited in Gliem and Gliem (2003) provide similar cut-offs and *"consider values greater than 0.9 as excellent, 0.8 as good, 0.7 as acceptable, 0.6 as questionable, 0.5 as poor, and below 0.5 as unacceptable"*. In this study, validation of Cronbach alpha values for sub-scales of all usable respondents (n=234) were compared with sub-populations by Region: SHR (n=115) or CDHA (n=119); clinical condition: Heart Attack or Myocardial Infarction (MI n=127) and stroke or cerebro-Vascular Accident (CVA n=105).

3.8 Psychometric testing of variables

`Psychometric testing strategies for each variable are discussed below.

3.8.1 Satisfaction with performance of duties (SPD)

Satisfaction with performance of duties was measured using two factors from a three factor career satisfaction questionnaire developed in several studies by Lepnurm and colleagues between 2005 and 2012 (Dobson, Lepnurm & Struening, 2005; Lepnurm et al., 2009; Lepnurm et al., 2012). Correlations of 0.2 - 0.3 were considered weak, 0.31- 0.60 moderate and 0.61 to .0.80 strong. Any loadings above 0.80 suggests multicollinearity. The reporting of correlations are not to be confused with Beta values reported in the results section. The first factor consisted of six items related to performance of administrative duties. The second factor consisted of seven items related to performance of clinical duties; and the third factor consisted of five items related to personal satisfaction. All items consisted of a six point Likert scale scored from Very Dissatisfied to Very Satisfied. The 13 item SPD scale evolved out of the first two factors of the full career satisfaction scale by excluding the 5 items addressing personal satisfaction issues. In

our EFA using SPSS, the option “suppress absolute values” less than 0.25 was used (compared to generally used values from 0.3 to 0.4) to identify minimally loaded items. This was done to view items with factor loadings at the lower end of the cut off for all components.

The first factor explained 19.7% of the total variance in scores and the loadings for the six items related to administrative duties ranged from .814 to .524 (Table 3-2). None of the cross-loadings exceeded primary loadings. The Cronbach’s alpha for this six item factor was .747 and examining the inter-item correlation matrix demonstrated that all of the items contributed with inter-item correlations ranging between, 0.269 to 0.699 (Table E-1). Only one correlation was lower than the desired threshold of .3 however, the other correlations for this item with “admin aspects” exceeded the threshold (Table E-1). The Cronbach alpha values for the six item sub-scale termed Satisfaction with Administrative Duties was 0.834 (Table E-2).

Table 3-2. Rotated Component Matrix - SPD

Rotated Component Matrix - Satisfaction with Performance of Duties			
	Component		
	Sat Perf - Admin Duties (alpha = 0.834)	Sat Perf - Clinical Duties (alpha =0.761)	Sat Personal (alpha =0.760)
SAT-opportunities to suggest improvements for care	0.814		
SAT-interactions & relationships with administrators	0.792		
SAT-administrative aspects of professional practice	0.691		0.457
SAT-role in organizing treatment programs	0.586		
SAT-working in a unit dedicated to best care	0.544	0.429	
SAT-authority to get clinical decisions carried out	0.524	0.478	
SAT-relationships with patients from providing care		0.745	
SAT-the diversity of patients you see		0.646	
SAT-Interactions & relationships with other nurses(peers)		0.576	
SAT-ability to meet needs of your patients	0.376	0.576	
SAT-capacity to keep up with advances in specialty		0.548	0.267
SAT-Interactions & relationships with physicians	0.264	0.540	
SAT-ability to access resources needed for patients	0.453	0.467	
SAT-with advancement in your professional career	0.256		0.725
SAT-ability to maintain satisfying community activities			0.704
SAT-ability to control work schedule	0.333		0.641
SAT-with earnings as a professional	0.250		0.631
SAT-keep work responsibilities interfering personal life			0.597
Rotated Sums of Squares - loadings	19.07%	17.12%	15.15%
Extraction Method: Principal Component Analysis with loading cut off value of 0.25			

Similarly, the second factor explained 17.12% of the total variance in scores and loadings for the seven items for Satisfaction with Clinical Duties ranged from .0745 to 0.467 (Table 3-2). None of the cross-loadings exceeding primary loadings. Cronbach's alpha for this second factor was 0.796 and inter-item correlations ranged between 0.197 and 0.547. While five inter-item

correlations are less than 0.30 threshold; however each item was supplemented by other items that had much higher inter-item correlations. Therefore, each item contributed to the overall scale (Table E-3). High individual alpha-if-deleted values indicated that all items contributed to the internal consistency of this factor. The Cronbach's alpha for the seven item sub-scale called Satisfaction with Clinical Duties was 0.761 (Table E-4).

The third factor was composed of five items related to personal satisfaction and explained 15.15% of the total variance (Table 3-2). Collectively, the three factors explained 51.34% of the variance; however, this study focused on the first two factors comprising Satisfaction with Performance of Duties, thus the items related to Personal Satisfaction were not included in the analysis.

Validation of the measure of SPD, the Cronbach's alphas for the two sub-scales "Satisfaction with Administrative Duties" (SAdm) and "Satisfaction with Clinical Duties" (SClin) for all usable respondents were compared with sub-populations separated by region and unit. For SAdm, reliability for all respondents was 0.834 and was comparable with sub-population reliabilities when compared by region (SHR 0.859 and CDHA 0.809) and clinical condition (MI 0.805 and CVA 0.863). For the Inter-item correlation matrix – Clinical (Table E-3), the item satisfaction with diversity of patients had four values of five lesser than 0.3. This was likely due to the fact that nurses in the two specific wards (stroke and cardiac) see a homogeneous group of patients. In contrast the original scale was developed for doctors and had recorded values within the threshold of 0.3 to 0.7 which was likely due to their scope of practice bringing in a diverse set of patients with a variety of ailments. The item was not deleted as it supported a total Cronbach's alpha of 0.761 for the SClin scale and the individual item provided a decent 0.744 under Cronbach's alpha if time was the deleted column. For SClin, reliability for all respondents was 0.761) and was comparable with sub-population reliabilities separated by region (SHR 0.763 and CDHA 0.759) and clinical condition (MI 0.738 and CVA 0.871)

3.8.2 Organizational culture

Organizational culture scale was developed and modified from Lepnurm et al. (2012) for this study. The scale consisted of 13 items with 6 Likert style responses ranging from Strongly Disagree (1) to Strongly Agree (6). Two items were removed from the scale: opportunities for advancement because the unit had very little control over possibilities for promotions; and

reporting of incidents due to excessive missing values.

Organizational culture consisted of three factors: the first factor consisted of six items related to Behavioural Culture; the second factor consisted of four items related to Objective Culture; and a one item factor on the use of sick-time. All items were scored by use of a 6 point Likert scale scored from Very Dissatisfied to Very Satisfied.

The first factor, Behavioural Culture (BehCult) explained 22.4% of the total variance and the loadings for the six items related to administrative duties ranged from 0.814 to 0.579. None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for BehCult was 0.754 and the inter-item correlations ranged between 0.197 and 0.536 (Table 3-3; G-5). Two items had inter-item correlations with other items lower than 0.30. However conceptually they were important to the scale as indicated by the high Cronbach's alpha if deleted scores (Table E-6). The second factor, Objective Culture (ObjCult) explained 21.9% of the variation in OC and the Cronbach's alpha for ObjCult was 0.712. Examination of the inter-item correlation matrix demonstrated two strong items with at least some inter-item correlations exceeding 0.40. However, the item related to "rewarding people working at a high standard" had very weak inter-item correlations of .072 and .079 (Table E-7). Although correlations were weak, it was included as it was considered a critical for validity reasons and reliability of the four item scale remained above 0.700. In addition, deletion of this item would not support the common practice of having at least 3 items in a scale. The single item third factor on sick-time explained 12.7% of the variation in OC. Collectively; the three factors explained 57.03% of the variance in OC (Table E-8).

Table 3-3. Rotated Component Matrix – Organizational Culture.

Rotated Component Matrix - Organizational Culture			
	Component		
	Behavioural Culture (alpha = 0.754)	Objective Culture (alpha = 0.712)	Sick-Time
OC-The region-district does NOT reward people working at high std	0.811		
OC-People in the region-district face demands so get thru the day	0.674	0.285	
OC-People in the region-district evade responsibility when problems	0.598	0.256	0.510
OC-SHR rewards people or units contributing innovations	0.533	0.390	-0.318
OC-The region-district does NOT learn from experiences of other orgs	0.531	0.263	0.442
OC-Patient Care not well organized in the health region	0.527		
OC-SHR is committed to objective stds to improve care		**0.814**	
OC-SHR is committed to participating in research		**0.695**	
OC-Units in the SHR cooperate to solve problems	0.295	**0.691**	
OC-The region-district is NOT committed to using best practices		**0.579**	
OC-Sick time is over-used by providers in the region-district			0.808
Rotated Sums of Squares loadings - % of Variance	22.43%	21.93%	12.66%
Extraction Method: Principal Component Analysis.			

To validate the measure of OC, the Cronbach's alphas for the two sub-scales BehCult and ObjCult for all usable respondents were compared with sub-populations separated by region and clinical condition. For BehCult the reliability for all respondents was 0.754 and was comparable with sub-population reliabilities when separated by Region (SHR 0.777 and CDHA 0.742) and clinical condition (MI 0.750 and CVA 0.763). For ObjCult, reliability for all respondents was 0.712 with acceptable comparisons with sub-population reliabilities by separated by region (SHR 0.674 and CDHA 0.747) and clinical condition (MI 0.756 and CVA 0.657).

3.8.3 Professional equity (PE)

The PE Scale used for this study was originally developed by Dobson et al. (2005) for a national study of physicians (Lepnurm et al., 2005) and modified by Lepnurm et al. (2012) specifically for nurses. The PE scale is well established; nevertheless the inter-item correlation matrices and item-total statistics for all three scales: fulfillment, PE and recognition were generated for all respondents and compared by region and clinical condition (Table E-9; G-10; G-11). All items

were measured using a 6 point scale. For fulfillment, the reliability for all respondents was 0.887 (Table E-9; G-13) and was comparable with sub-population when separated by region (SHR 0.891 and CDHA 0.881) and clinical condition (MI 0.881 and CVA 0.882). For pay equity, reliability for all respondents was 0.908 (Table E-12) which compared well with sub-population reliabilities when separated by region (SHR 0.874 and CDHA 0.922) and clinical condition (MI 0.891 and CVA 0.922). For recognition, the reliability for all respondents was 0.782 (Table E-14) which was comparable with sub-population reliabilities when separated by region (SHR 0.801 and CDHA 0.745) and clinical condition (MI 0.742 and CVA 0.815).

3.8.4 Organizational support from unit (US)

Organizational support from unit (US) is measured by use of a seven item scale developed by Lepnurm et al. (2012) for this study. All items were measured by use of a six-point scale. Theory supported two factors of US; the first group of four items was related to the "organization of the unit" (UnitOrgn); and the second group of three items was related to "professional development" (UnitDev). Interestingly one factor explained 58.78% of the variance in Support from the Unit. Nevertheless, Cronbach alpha statistics showed that both hypothesized sub-scales were reliable for respondents as a whole and for sub-populations when separated by region and clinical condition.

For UnitOrgn, the reliability for all respondents was 0.796 (Table E-15) and was comparable with sub-population reliabilities when separated by region (SHR 0.778 and CDHA 0.790) or clinical condition (MI 0.790 and CVA 0.793). For UnitDev, reliability for all respondents was 0.811(Table E-16) and compared well with sub-population reliabilities when separated by region (SHR 0.786 and CDHA 0.811) or clinical condition (MI 0.802 and CVA 0.821). All inter-item correlations for both sub-scales fell between the acceptable range of .30 to .70 (Table E-17 and G-18). When examined, the item-total statistics showed that all items contributed to the scale and none appeared to be redundant.

3.8.5 Leadership (L)

The L scale was developed by Lepnurm et al. (2012) for this specific study. The scale was an 11 item Likert type scale with all items measured by use of a six-point scale. Review of literature supported three factors to assess leadership: the first group of three items was related to the "Values of Leaders" (LValues); the second group of four items was related to "Integrity of

Leaders" (LIntegrity); and the third group of four items was related to the "Actions of Leaders" (LAction). Interestingly, one factor explained 67.37% of the variance in Leadership. Nevertheless, Cronbach alpha statistics showed that all three hypothesized sub-scales were highly reliable (Table E-19, G-20 and G-21) for respondents as a whole and for sub-populations when separated by region and clinical condition.

For LValues, the inter-item correlation for "express views to leadership" and "process used to implement ideas" was 0.739 and was slightly greater than the desired threshold of 0.7. However, these items were considered conceptually distinct. The internal consistency for LValues was 0.862 (Table E-22, G-23).

For LIntegrity, the inter-item correlation between "leaders honest in dealings" and "fair and consistent treatment" was 0.752 and was greater than the desired threshold of 0.7. However, these items were considered conceptually distinct. The internal consistency for LIntegritywas 0.847 (Table E-22, G-23).

For LActions, the inter-item correlation between "communications regarding changes" and "training to deal with changes" was 0.808 and was greater than the desired threshold of 0.7. One item consisted of "talking" and the other "action" however, both are necessary. The internal consistency for LActions was 0.899 (Table E-23, G-24).

For LValues, the reliability for all respondents was 0.862 (Table E-20) and was comparable with sub-population reliabilities when separated by region (SHR 0.882 and CDHA 0.853) and clinical condition (MI 0.870 and CVA 0.856). For LIntegrity, reliability for all respondents was 0.847 and compared well with sub-population reliabilities when separated by region (SHR 0.830 and CDHA 0.848) and clinical condition (MI 0.857 and CVA 0.814). For LACTION the reliability for all respondents was 0.899 and was comparable with sub-population reliabilities when separated by region (SHR 0.906 and CDHA 0.887) and clinical condition (MI 0.902 and CVA 0.896).

3.8.6 Daily distress (DD)

Daily Distress was measured using a 20 item scale which greatly expanded the original of Lepnurm, Lockhart, & Keegan, (2009) which consisted of 13 items. The new DD consisted of four factors: the first factor consisted of seven items related to Exhaustion; the second factor

consisted of four items related to Moral Distress; the third factor consisted of five items related to Hassles; and the fourth factor consisted of four items related to Positive Attitude. All items were measured by use of a seven-point Likert scales scored from Never to Daily.

The first factor, exhaustion explained 17.7% of the total variance and the loadings for the seven items ranged from .782 to .450. None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for exhaustion was .840 and the inter-item correlation matrix showed that the correlation between "emotionally drained" and "physically exhausted" exceeded .790 (Table E-25). However, these items were considered conceptually distinct and therefore neither were redundant (Table 3-4, G-26). The second factor, moral distress explained 16.7% of the total variance and the loadings for the four items ranged from .801 to .553 (Table E-27). None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for moral distress was .860 and the inter-item correlation matrix demonstrated correlation between "consultations with specialists" and "complex tasks without specialized staff or equipment" of 0.713 (Table E-26). However, these items were considered conceptually distinct and therefore neither was redundant.

Table 3-4. Rotated Component Matrix – Distress.

Rotated Component Matrix- Distress

	Component			
	Exhaustion (alpha = 0.840)	Moral Distress (alpha = 0.860)	Hassles (alpha = 0.838)	Positive Attitude (alpha = 0.757)
DD -experience emotionally draining workdays	0.782		0.327	
DD -experience physically exhausting workdays	0.712		0.385	
DD -irritable anxious at home thinking about work	0.710	0.285		
DD -fatigue from working late or nights	0.665		0.312	
DD -feel sad bc death or serious illness of patient	0.630			
DD -work has desensitized feelings & emotions	0.492	0.310		
DD -conflict work & home responsibilities	0.450	0.392		
DD -carry out complex tasks without consultation		**0.801**		
DD -carry out specialized tasks without tech or staff		**0.784**		
DD -observe compromises in care given to patients		**0.731**	0.366	
DD -experience frustrated from demanding patients	0.328	**0.553**	0.355	
DD -workdays with interruptions to your duties			0.800	
DD -doing tasks NOT your responsibility			0.753	
DD -observe poor orgn tests & treatments		0.436	0.657	
DD -frustration accessing resources for patients		0.514	0.598	
DD -have to cover for staff who called in sick	0.288	0.385	0.457	
DD RV -can concentrate on tasks that need to be done				**0.819**
DD RV-are in control of day to day work activities				**0.812**
DD RV-confident of working at a high standards				**0.798**
DD RV-feel excited about the work you do	0.292	-0.267		**0.564**
Rotated Sums of Squares loadings - % of Variance	17.71%	16.65%	14.90%	12.26%

Extraction Method: Principal Component Analysis.

The third factor, hassles, explained 14.9% of the total variance and the loadings for the five items ranged from .800 to .457 (Table 3-5). None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for hassles was .838 and the inter-item correlation matrix demonstrated correlations in the desired range of .3 to .7 (Table 3-6, G-27, G-29). The fourth factor, "positive attitude" explained 12.3% of the total variance and the loadings for the four items ranged from .819 to .564. None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for positive attitude was .757 (Table E-27, G-28). Examination of the inter-

item correlation matrix demonstrated two correlations slightly below the desired threshold of .3. However, both items contributed to the sub-scale. Collectively, the four factors explained 61.52% of the variance in DD (Table E-27, G-29, G-30).

Table 3-5. Item-Total Statistics – Exhaustion.

Item-Total Statistics

Sub-Scale Exhaustion 7 items(Cronbach's alpha = 0.840)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DD -fatigue from working late or nights	0.644	0.804
DD -conflict work & home responsibilities	0.497	0.827
DD -irritable anxious at home thinking about work	0.678	0.799
DD -work has desensitized feelings & emotions	0.476	0.834
DD -feel sad bc death or serious illness of patient	0.491	0.828
DD -experience emotionally draining workdays	0.732	0.790
DD -experience physically exhausting workdays	0.624	0.810

Table 3-6. Inter-Item Correlation Statistics – Moral Distress.

Inter-Item Correlation Matrix -Moral Distress

	-carry out complex tasks without consultation	-carry out specialized tasks without tech or staff	-observe compromises in care given to patients
DD -experience frustrated from demanding patients	0.576	0.451	0.528
DD -carry out complex tasks without consultation		0.713	0.680
DD -carry out specialized tasks without tech or staff			0.690

To validate DD, the Cronbach's alphas of the four sub-scales for all respondents were compared with sub-populations when separated by region and clinical condition. For exhaustion the reliability for all respondents was 0.840 and was comparable with sub-population reliabilities when separated by region (SHR 0.852 and CDHA 0.818) and clinical condition (MI 0.840 and CVA 0.827). For moral distress reliability for all respondents was 0.860 and had acceptable comparisons with sub-population reliabilities when separated by region (SHR 0.885 and CDHA 0.832) and clinical condition (MI 0.862 and CVA 0.863). For hassles, the reliability for all respondents was 0.838 and was comparable with sub-population reliabilities when separated by region (SHR 0.865 and CDHA 0.787) and clinical condition (MI 0.859 and CVA 0.811). For

positive attitude, reliability for all respondents was 0.757 and was acceptable when compared with sub-populations reliabilities when separated by region (SHR 0.735 and CDHA 0.775) and clinical condition (MI 0.726 and CVA 0.787).

3.8.7 Quality rating (QR)

The QR was measured by use of seven percentile scales covering the quality of people (4 items) and quality of infrastructure (3 items). Each item was scored on a 0 - 100 point response scale starting from 0 (non-functional) to 100 (perfect) in 10% increments with the following standards provided to the respondents as a guide.

0 = non-functional

10-40 = terrible to poor

50 or 60 = passable to adequate

70-90 = good to excellent

100 = perfect

On each item, a response marked "Don't Know" was provided resulting in 12 choices for respondents. This percentile approach to measuring quality was developed by the MERCURi Research Group over many years in studies of physicians and nurses (Dobson, 2005; Lepnurm et al., 2006; Lepnurm, Dobson, Backman & Keegan, 2007; Lepnurm et al., 2012; Lepnurm, Dobson, Peña-Sánchez & Nesdole, 2015).

Quality Rating consisted of two factors: the first factor consisted of four items related to the Capabilities of Personnel (Q-Personnel) and the second factor consisted of three items related to infrastructure (Q-Infra) (Table 3-7).

Table 3-7. Rotated Component Matrix – Quality Rating.

Rotated Component Matrix - Quality Ratings

	Component	
	Q-People (alpha = 0.801)	Q-Infra (alpha = 0.827)
Capabilities of Therapy Staff	0.855	
Capabilities of Nursing Staff	0.771	
Capabilities of Medical Staff	0.756	
Capablities of Technical Staff	0.707	
Suitability of Physical Facilities		**0.883**
Access-Functioning of Equipment		**0.859**
Organization of Responsibilities	0.346	**0.772**
Rotated Sums of Squares loadings	36.39%	32.09%

Rotation Method: Varimax with Kaiser Normalization.

The first factor, Q-Personnel explained 36.4% of the total variance and the loadings for the four items related to capabilities of personnel ranged from .855 to .707. None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for Q-Personnel was 0.801 and examining the inter-item correlation matrix showed that all correlations fell in the desired range of .3 to .7 (Table E-33; G-34). The second factor, Q-Infra explained 32.1% of the total variance and the loadings for the three items related to administrative duties ranged from 0.883 to 0.772 (Table E-33). None of the cross-loadings exceeded primary loadings. The Cronbach's alpha for Q-Personnel was .827 and examining the inter-item correlation matrix showed that all correlations fell in the desired range of 0.3 to 0.7 (Table E-29, G-33, G-34). Collectively, Q-Personnel and Q-Infra explained 68.48% of the variance in QR (Table 3-7).

For concurrent validation, the measure QR, the Cronbach's alphas for the two sub-scales Q-Personnel and Q-Infra for all usable respondents were compared with sub-populations when separated by region and clinical condition. For Q-Personnel the reliability for all respondents was 0.801 which was comparable with sub-population reliabilities when separated by region (SHR 0.861 and CDHA 0.757) and clinical condition (MI 0.778 and CVA 0.819). For Q-Infra

reliability for all respondents was 0.827 and was considered acceptable when compared with sub-population reliabilities when separated by region (SHR 0.853 and CDHA 0.826) and clinical condition (MI 0.831 and CVA 0.833).

3.8.8 Control variables

One control variable was used in this study: years in practice. Age has been used previously, however, age overlooks other activities that an individual may be engaged in prior to beginning a career in nursing. Years in practice has been used previously in the study of nurses (Ingersoll, Olsan, Drew-Cates, DeVinney, & Davies, 2002; Anderson, Issel, & McDaniel Jr, 2003; Grady et al., 2008). Gender is also often used as a dummy variable, however, there are so few males in nursing and by extension among the respondents of this study that meaningful comparisons between genders could not be made.

3.9 Data management –Confidentiality

In this study, study coordinators at each site worked with three health services managers in Halifax (acute stroke, rehabilitation and cardiology) and two nursing managers in Saskatoon (cardiology and stroke) to:

- obtain lists of eligible nursing staff;
- code the questionnaires such that respondents remained anonymous;
- track completion of questionnaires;
- distribute gifts to respondents;
- collect questionnaires; and
- relay any questions or concerns that nurses had with the study to the researchers.

3.10 Limitations

The limitations in this study are: the use of two cross-sectional convenience samples, common method variance, and variations in the process of collecting data at the two sites. A shortcoming of cross-sectional designs is that it is difficult, some say impossible, to determine causal factors. Causal inferences are plausible in cross-sectional designs if the hypothesized pathways of the models are each supported by theory, then causal modeling statistical techniques may be used

(Polit & Beck, 2004). However, many researchers (Bollen, 1989; Hoyle, 1995; Loehlin, 1992) have argued that the term “causal model” is generally a misnomer for regression based SEM modeling, even though there are supporters of the use of SEM (Pearl, 2012; Bollen & Pearl 2013)

Measures used in this study were built on strong theoretical foundations. Concurrent validation was completed by comparison of psychometric statistics for the measures by region and by clinical group. The items within the measures were only slightly positively skewed with sufficient responses obtained at both extremes of scales; and the scatter plots supported the assumptions of regression analysis.

The reality of administering questionnaires fall into two categories namely logistics and respondent fatigue. Logistics means gaining cooperation from busy managers who are ultimately responsible for liaising with researchers and ward nurses to juggle responsibilities in a delicate and balanced manner to get the questionnaires completed by the ward nurses who are also responsible for patient care. Respondent fatigue is to be considered well in advance of designing and administering the surveys. The balance to be maintained is ensuring that the questionnaire covers the most critical factors but will not overload the respondent with multitudes of questions creating respondent fatigue. Due to this balancing act, not all relevant factors and the items associated with them could be included in the questionnaire.

Chapter 4: Results

Preface

This study was designed to investigate factors influencing SPD of nurses employed in Canadian hospitals. This research improves our understanding of job satisfaction of nurses in Canadian hospitals as outlined in the following objectives:

1. Assess relationships between DD, PE, OC, OL, PE and OS, and measures of SPD of nurses working in two Canadian Health regions by use of linear regression modeling.
2. Develop a SEM for SPD for nurses working in two Canadian Health regions and compare with the linear regression model developed in objective 1 to assess model fit, complementarity and applicability for extension in predictions.

To investigate these objectives, a hypothesized model (Figure 4-1) was developed and tested using two cohorts of nurses from two similar sized hospitals –Saskatoon and Halifax. The results of regression and SEM analyses are elaborated in this chapter. Descriptive statistics are reported for each selected variable from the surveys of nurses in the heart and stroke units of SHR and CDHA. Next, results of linear regression analysis and correlation analysis are presented. Finally, results of SEM analysis are presented.

Dependent Variable: Satisfaction with Performance of Duties	
Independent Variables	
1	Years in Practice
2	Quality Ratings of Personnel
3	Quality Ratings of Inftrastructure
4	Exhaustion 7 items
5	Moral Distress 4 items
6	Hassles 5 items
7	Positive Attitude 4 items
8	Unit Develop 3 items
9	Unit Organization 4 items
10	Leader Integrity 4 items
11	Leader Actions 4 items
12	Leader Values 3 items
13	Behavior Culture 6 items
14	Objective Culture 5 items
15	Pay Equity 5 items
16	Fulfill Equity 6 items
17	Recognition 7 items

Figure 4-1. Hypothesized Regression Model of factors affecting satisfaction with performance of duties.

The SEM analysis tested the hypothesized model for fit while controlling for YP. Gender was not used as a control variable since a large majority of the nurses are female. The chapter concludes with a synthesis of overall findings.

4.1 Descriptive statistics

4.1.1 Results of nurse questionnaires

Descriptive statistics for variables used in this study are presented in Table 4-1; 4-2; 4-3; 4-4 according to type of clinical unit (cardiology / stroke) and location of the health region (Saskatoon / Halifax).

Table 4-1. Descriptive statistics of dimensions by type of unit.

Dimensions	Cardiology Units n= 127		Stroke Units n=107	
	Mean	Std Dev	Mean	Std Dev
13 item Sat Perf Duties (DV)	4.1	0.5	4.1	0.6
Sat Clinical Duties 7 items	4.3	0.6	4.4	0.6
Sat Adm Duties 6 items	3.9	0.6	3.8	0.8
Quality Ratings of Personnel	77.5	8.7	79.7	9.9
Quality Ratings of Inftrastructure	60.6	16.1	62.1	16.4
Exhaustion 7 items	3.5	1.1	3.1	1.1
Moral D 4 items	3.0	1.3	2.9	1.3
Hassles 5 items	4.1	1.3	3.9	1.2
Positive Attitude 4 items	4.2	1.0	4.3	1.2
Unit Orgn 4 items	4.0	0.8	4.3	0.8
Unit Develop 3 items	4.0	1.0	4.2	1.0
Leader Values 3 items	3.3	1.1	3.6	1.1
Leader Integrity 4 items	3.6	1.1	4.1	0.9
Leader Actions 4 items	3.3	1.1	3.6	1.1
Behavior Culture 6 items	2.9	0.8	3.0	0.9
Objective Culture 5 items	3.7	0.8	3.9	0.8
Fulfill Equity 6 items	4.3	0.8	4.0	0.9
Pay Equity 5 items	3.1	0.9	2.8	1.0
Recognition 7 items	4.0	0.6	3.9	0.7

Table 4-2. Descriptive statistics of dimensions by Health District/Region.

Dimensions	CDHA n=119		SHR n=115	
	Mean	Std Dev	Mean	Std Dev
13 item Sat Perf Duties (DV)	4.0	0.6	4.2	0.6
Sat Clinical Duties 7 items	4.3	0.6	4.4	0.6
Sat Adm Duties 6 items	3.7	0.8	3.9	0.7
Quality Ratings of Personnel	78.0	9.3	79.0	9.3
Quality Ratings of Inftrastructure	60.3	17.2	62.2	15.2
Exhaustion 7 items	3.5	1.1	3.1	1.1
Moral D 4 items	3.2	1.3	2.8	1.3
Hassles 5 items	4.3	1.1	3.7	1.3
Positive Attitude 4 items	4.3	1.2	4.2	1.0
Unit Orgn 4 items	4.0	0.8	4.3	0.8
Unit Develop 3 items	3.8	1.0	4.4	0.9
Leader Values 3 items	3.2	1.1	3.6	1.1
Leader Integrity 4 items	3.6	1.1	4.0	1.0
Leader Actions 4 items	3.2	1.1	3.7	1.1
Behavior Culture 6 items	3.0	0.8	2.9	0.8
Objective Culture 5 items	3.8	0.9	3.8	0.7
Fulfill Equity 6 items	4.0	0.9	4.3	0.8
Pay Equity 5 items	2.7	1.0	3.1	0.8
Recognition 7 items	3.8	0.7	4.1	0.7

Table 4-3. Descriptive statistics of latent variables by type of unit.

Measures	Cardiology Units n= 127		Stroke Units n=107	
	Mean	Std Dev	Mean	Std Dev
13 item Sat Perf Duties	4.1	0.5	4.1	0.6
Overall Quality	75.1	11.4	77.2	12.2
20 item Distress	3.6	0.9	3.4	0.9
All Unit Support 7 items	4.0	0.8	4.3	0.9
Division Leadership 11 items	3.4	1.1	3.7	1.0
Org Culture 11 items	3.3	0.7	3.4	0.7
All Equity 18 items	3.8	0.6	3.6	0.7

Table 4-4. Descriptive statistics of latent variables by Region/District.

Measures	CDHA n=119		SHR n=115	
	Mean	Std Dev	Mean	Std Dev
13 item Sat Perf Duties	4.0	0.6	4.1	0.6
Overall Quality	75.5	12.9	76.6	10.5
20 item Distress	3.7	0.9	3.3	0.9
All Unit Support 7 items	3.9	0.8	4.3	0.8
Division Leadership 11 items	3.3	1.0	3.8	1.0
Org Culture 11 items	3.4	0.7	3.3	0.7
All Equity 18 items	3.6	0.6	3.9	0.6

Note: For tables 4.1 to 4.4 individual measures were standardized using the total score and summated scores were divided by the number of items in that measure.

4.1.2 Study sample descriptive statistics

Additional summary statistics are presented in Table 4-5; 4-6; 4-7; 4-8.

Table 4-5. Response Rates by District/Region, type of unit and category of nurse.

		Table 1			
Response Rate of Nurses by Region and Unit					
Region	Unit	Category of Nurse	Responses	Eligible	Response %
Halifax	Cardiology	RNs	66	98	67.35%
		LPNs	0	0	
		All Nurses	66	98	67.35%
	Stroke	RNs	32	42	76.19%
		LPNs	21	28	75.00%
		All Nurses	53	70	75.71%
Saskatoon	Cardiology	RNs	59	112	52.68%
		LPNs	3	5	60.00%
		All Nurses	62	117	52.99%
	Stroke	RNs	42	65	64.62%
		LPNs	13	21	61.90%
		All Nurses	55	86	63.95%
Total		All Nurses	236	371	63.61%

Table 4-6. Descriptive statistics for respondents by type of unit.

Table 2

Age and Years in Practice by Unit and Region

Unit and Region	N	Age				Years in Practice			
		Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max
IMCU-CCU-CDHA	33	40.39	11.7	24	65	16.7	11.5	1	43
CardioPCU-CDHA	33	33.67	13.3	9	56	12.2	11.7	1	35
AcuteStrokePCU-CDHA	32	41.31	12.8	23	63	16.7	11.9	1	37
RehabStroke-CDHA	21	42.24	11.1	21	57	19.7	11.7	1	37
CardioPCU-SHR	28	32.89	8.9	23	57	8.6	7.2	1	30
CCU-SHR	24	38.29	10.3	26	58	16.5	10.9	3	38
StrokePCU-SHR	50	35.52	11.2	22	60	11.7	10.2	1	35
Total	221	37.42	11.8	9	65	14.1	11.1	1	43

Table 4-7. Descriptive statistics of respondents by category of nurse.

Table 3

Age and Years in Practice by Nursing Qualification

Nursing Qualification	N	Age				Years in Practice			
		Mean	Std Dev	Min	Max	Mean	Std Dev	Min	Max
RN-Registered Nurse	182	37.3	11.9	9	65	14.1	11.1	1	43
LPN-Licensed Practical Nurse	33	39.1	12.0	23	63	14.4	11.7	1	37
Other	4	35.3	9.7	25	47	11.3	6.7	3	19
Total	219	37.5	11.8	9	65	14.1	11.1	1	43

Table 4-8. Descriptive statistics of dimensions by Region/District and type of unit.

Table 2											
Descriptive Statistics for Respondents by Region or District and Clinical Unit											
Dependent & Independent Variables	Scale Range	All Respondents		Region SHR		District CDHA		MI		CVA	
		Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev	Mean	Std Dev
13 item Sat Perf Duties	**1.0 to 6.0**	4.1	0.6	4.2	0.6	4.0	0.6	4.1	0.5	4.1	0.6
Years in Practice	1 to 50	14.1	11.1	12.2	10.1	16.0	11.8	13.5	10.9	14.8	11.4
Quality Ratings of Personnel	1 to 100	78.5	9.3	79.0	9.3	78.0	9.3	77.5	8.7	79.7	9.9
Quality Ratings of Inftrastructure	1 to 100	61.3	16.2	62.2	15.2	60.3	17.2	60.6	16.1	62.1	16.4
Exhaustion 7 items	1.0 to 7.0	3.3	1.1	3.1	1.1	3.5	1.1	3.5	1.1	3.1	1.1
Moral D 4 items	1.0 to 7.0	3.0	1.3	2.8	1.3	3.2	1.3	3.0	1.3	2.9	1.3
Hassles 5 items	1.0 to 7.0	4.0	1.3	3.7	1.3	4.3	1.1	4.1	1.3	3.9	1.2
Positive Attitude 4 items	1.0 to 7.0	4.2	1.1	4.2	1.0	4.3	1.2	4.2	1.0	4.3	1.2
Unit Orgn 4 items	1.0 to 6.0	4.1	0.8	4.3	0.8	4.0	0.8	4.0	0.8	4.3	0.8
Unit Develop 3 items	1.0 to 6.0	4.1	1.0	4.4	0.9	3.8	1.0	4.0	1.0	4.2	1.0
Leader Values 3 items	1.0 to 6.0	3.4	1.1	3.6	1.1	3.2	1.1	3.3	1.1	3.6	1.1
Leader Integrity 4 items	1.0 to 6.0	3.8	1.0	4.0	1.0	3.6	1.1	3.6	1.1	4.1	0.9
Leader Actions 4 items	1.0 to 6.0	3.4	1.1	3.7	1.1	3.2	1.1	3.3	1.1	3.6	1.1
Behavior Culture 6 items	1.0 to 6.0	3.0	0.8	2.9	0.8	3.0	0.8	2.9	0.8	3.0	0.9
Objective Culture 5 items	1.0 to 6.0	3.8	0.8	3.8	0.7	3.8	0.9	3.7	0.8	3.9	0.8
Fulfill Equity 6 items	1.0 to 6.0	4.2	0.9	4.3	0.8	4.0	0.9	4.3	0.8	4.0	0.9
Pay Equity 5 items	1.0 to 6.0	2.9	0.9	3.1	0.8	2.7	1.0	3.1	0.9	2.8	1.0
Recognition 7 items	1.0 to 6.0	4.0	0.7	4.1	0.7	3.8	0.7	4.0	0.6	3.9	0.7
Respondents/Eligible		234 / 371 = 63.07%		115	203	119	168	127	215	107	156

4.1.3 Correlation analysis

Correlation analysis was performed to identify trends among predictor variables included in the study and results are presented in Table 4-9. All correlations ranged from moderate to high ($r = .25$, $p < .001$ and $r = .72$, $p < .001$). All predictor variables were significantly correlated with SP and support the use of the variables for multiple regression analysis.

Table 4-9. Correlations between predictors and Satisfaction with Performance of Duties.

Table 3

Correlations for all Independent Variables Entered

Satisfaction with Performance of Duties	Pearson Correlation	Years in Practice	Quality Ratings of Personnel	Quality Ratings of Infrastructure	Exhaustion	Moral Distress	Hassles	Positive Attitude	Unit Orgn	Unit Development	Leader Values	Leader Integrity	Leader Actions	Behavior Culture	Objective Culture	Fulfill Equity	Pay Equity	Recognition Equity
		0.003	.294**	.456**	-.421**	-.405**	-.472**	.538**	.660**	.574**	.533**	.526**	.526**	.502**	.550**	.650**	.247**	.718**
	Sign	0.959	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2 tailed)

Fig 4-9A Full Set of Correlations

Pearson Correlations (two tailed significance)

	Years in Practice	Qpeople	Qinfra	PosAtt	Xhaust	MoralD	Hassles	UnitOrgn	UnitDev	L-Values	L-Integret	L-Actions	BehCult	ObjCult	Fulfill	PayEquity	Recogn
13 item Sat Perf Duties	0.003	.294**	.456**	.538**	-.421**	-.405**	-.472**	.660**	.574**	.533**	.526**	.526**	.502**	.550**	.650**	.247**	.718**
	0.959	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Years in Practice		-0.101	0.050	-0.016	-.152*	-0.089	0.025	-0.027	-.160*	-0.099	-0.063	-0.095	-0.077	-0.055	-0.005	-.180**	-0.122
		0.124	0.449	0.806	0.020	0.175	0.700	0.682	0.014	0.130	0.340	0.146	0.239	0.404	0.940	0.006	0.061
Quality Ratings of Personnel			.414**	.220**	-.135*	-.283**	-.256**	.262**	.302**	.288**	.311**	.299**	.244**	.335**	0.117	.244**	.296**
			0.000	0.001	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.074	0.000	0.000
Quality Ratings of Inftrastructure				.363**	-.340**	-.321**	-.395**	.437**	.376**	.386**	.406**	.416**	.385**	.386**	.261**	.155*	.369**
				0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018	0.000
Positive Attitude 4 items					-.250**	-.130*	-.138*	.390**	.262**	.307**	.280**	.239**	.266**	.304**	.535**	.168**	.493**
					0.000	0.047	0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000
Exhaustion 7 items						.631**	.610**	-.364**	-.271**	-.319**	-.343**	-.276**	-.309**	-.299**	-.362**	-.256**	-.394**
						0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Moral D 4 items							.696**	-.369**	-.385**	-.343**	-.343**	-.327**	-.403**	-.406**	-.227**	-.290**	-.424**
							0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hassles 5 items								-.465**	-.440**	-.413**	-.428**	-.439**	-.468**	-.392**	-.243**	-.237**	-.419**
								0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Unit Orgn 4 items									.760**	.531**	.570**	.546**	.503**	.575**	.470**	.208**	.549**
									0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
Unit Develop 3 items										.606**	.620**	.624**	.449**	.572**	.317**	.261**	.498**
										0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Leader Values 3 items											.854**	.848**	.504**	.436**	.277**	.243**	.517**
											0.000	0.000	0.000	0.000	0.000	0.000	0.000
Leader Integrity 4 items												.856**	.467**	.538**	.288**	.234**	.470**
												0.000	0.000	0.000	0.000	0.000	0.000
Leader Actions 4 items													.511**	.494**	.232**	.228**	.464**
													0.000	0.000	0.000	0.000	0.000
Behavior Culture 6 items														.560**	.300**	.205**	.434**
														0.000	0.000	0.002	0.000
Objective Culture 5 items															.319**	.148*	.417**
															0.000	0.024	0.000
Fulfill Equity 6 items																.286**	.580**
																0.000	0.000
Pay Equity 5 items																	.396**
																	0.000
	234	234	234	234	234	234	234	234	234	234	234	234	234	234	234	234	234

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

4.1.4 Linear regression analysis

All 16 predictor variables in the hypothesized sequence were checked for normality, linearity, and homoscedasticity. Multicollinearity was checked based by use of the Variance Inflation Factor (VIF) and its reciprocal tolerance test (Figure 4-1). The largest VIF was 2.149 and smallest was equal to 0.472 therefore by use of the tolerance values suggested by Bowerman and O' Connell (1990), Myers (1990), and Menard (1995), multicollinearity was not identified as an issue as VIF values were lesser than 10 and greater than 0.2. Following regression analysis, the model developed was sufficiently robust to explain 72.6% of the variance in SPD, however, many of the individual predictors were not significant. Therefore, backward exclusion was used to eliminate insignificant individual predictors until only significant predictors remained (Tabachnick & Fidell, 2014).

The final model included only significant predictors of SPD and the control variable, years in practice. Significant predictors included; hassles which explained 22.3% of the variance ($\beta = -0.102$, $p = 0.018$), positive attitude explained 22.8% of the variance ($\beta = 0.121$, $p = 0.007$); Unit Organization explained 11.9% of the variance ($\beta = 0.150$, $p = 0.004$), Leader Actions explained 2.1% of variance ($\beta = 0.123$, $p = 0.008$), Objective Culture explained 1.3% of the variation ($\beta = 0.131$, $p = 0.004$), fulfillment explained 7.6% of variance ($\beta = 0.257$, $p = 0.000$) and recognition explained 3.7% of the variation ($\beta = 0.281$, $p = 0.000$) (Table 4-10). The final model cumulatively explained 71.8% of the variation in SP which is considered a large effect (Cohen, 1988).

Table 4-10. Significant Predictors of Satisfaction with Performance of Duties.

Table 4

Model Summary (Dependent Variable: Satisfaction with Performance

Model	Independent Variables	R Square	Std. Error of the Estimate	Change Statistics			Std Coeffs	t	Sig.	Correlations			Collinearity Statistics	
				R Square Change	F Change	Sig. F Change	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	Years in Practice	0.000	0.5872	0.000	0.003	0.959	0.067	1.851	0.065	0.003	0.122	0.066	0.972	1.029
2	Hassles 5 items	0.223	0.5187	0.223	66.273	0.000	-0.102	-2.393	0.018	-0.472	-0.158	-0.085	0.690	1.450
3	Positive Attitude 4 items	0.451	0.4371	0.228	95.323	0.000	0.121	2.744	0.007	0.538	0.180	0.097	0.642	1.557
4	Unit Orgn 4 items	0.570	0.3876	0.119	63.485	0.000	0.150	2.881	0.004	0.660	0.189	0.102	0.465	2.149
5	Leader Actions 4 items	0.591	0.3789	0.021	11.671	0.001	0.123	2.660	0.008	0.526	0.175	0.094	0.590	1.695
6	Objective Culture 5 items	0.604	0.3735	0.013	7.592	0.006	0.131	2.873	0.004	0.550	0.188	0.102	0.607	1.648
7	Fulfill Equity 6 items	0.680	0.3364	0.076	53.887	0.000	0.257	5.379	0.000	0.650	0.338	0.191	0.550	1.819
8	Recognition 7 items	0.718	0.3169	0.037	29.699	0.000	0.281	5.450	0.000	0.718	0.341	0.193	0.472	2.119

i. Dependent Variable: 13 item Sat Perf Duties (df=225)

Because all predictor variables were measured by use of six or seven point scales, the unadjusted R^2 was used and is presented in Table 4-10. The standard error of the estimate was relatively small and decreased as more predictor variables were added to the model (Table 4-10). Zero-order correlation of predictor variables with dependent variable were high and support their use in the model. In addition, the part and partial correlations were smaller than the zero order correlations, indicating overlapping or shared variance among predictors was not excessive. However, considerable shared variance does exist among the reward dimensions- fulfillment and recognition; nevertheless the shared proportion was lesser than 0.35 (Table 4-10). Part correlation isolates the sharing of variance by predictors and does not exceed .2. The lowest tolerance statistic was .472 indicating sufficient independence to merit inclusion in the model. Separate regression models were analyzed; first by health region and second by clinical condition, but not at the same time (Table 4-11; 4-12) however, inconsistencies were observed in the results, likely due to insufficient ratio of cases to predictors (i.e. 20:1) as suggested by Austin and Steyerberg (2015).

An attempt was made at multi-level modelling by both region and type of clinical condition, however, the subject numbers fell below the recommended sample size, increasing the probability of measurement error masking real differences in measurement scores. A second attempt was made using the fixed model by clinical condition in both regions, 127 cardiology and 107 stroke. The stroke model agreed completely with the fixed model applied to all 234 subjects; however, the cardiology model did not, in that Hassles, Unit Organization and Leader Actions were not significant. When the fixed model was applied by region, Hassles, and Unit Organization were not significant for the 115 respondents of SHR and Positive Attitude and Objective Culture were not significant for the 119 respondents of CDHA.

These subgroup sizes ought to be sufficient in that they all exceed 100; suggesting real differences between predictors of SPD by clinical condition or region, but not both simultaneously. Therefore, rather than a fixed modelling approach a parsimonious approach was used, first by Clinical condition then by Region. For Cardiology: Hassles, Objective Culture, Fulfillment and Recognition explained 70.5% of the variance in SPD, controlling for years in practice. For Stroke, Hassles, Unit Organization, Leader Actions, Objective Culture, Fulfillment, Pay and Recognition explained 75.7% of the variance in SPD, controlling for years in practice. For SHR, Positive Attitude, Leader Values, Objective Culture, Fulfillment and

Recognition explained 73.9% of the variance in SPD, controlling for years in practice. For CHDA, Positive Attitude, Hassles, Unit Organization and Development, Fulfillment and Recognition explained 72.4% of the variance in SPD, controlling for years in practice (Table E – 37). Although the core concepts of Distress, Unit Support, Leadership, Culture and Equity were found to be important in all the models, differences in specific dimensions of the concepts were found.

The largest subgroup in the 234 responding nurses was 196 Registered Nurses (RNs); therefore, two separate analyses were carried out, regression using the fixed model and descriptives for all measures. The fixed model was in complete agreement with the 74.2% variance in SPD explained by Hassles, Positive Attitude, Unit Organization, Leader Actions, Objective Culture, Fulfillment, and Recognition, controlling for years in practice (Table E-38). Descriptive analysis of all the specific measures was carried out comparing RNs with all the respondents. Very little difference was found in any of the measures (Table E-39).

The effects of Years in Practice also deserved separate analyses, particularly on SPD. SPD was found to average 4.1 on a six point scale. Nurses with more than 30 years in practice reported the highest scores 4.3, and nurses between 10 and 19 years in practice score 4.2 SPD and the middle group with 20 to 29 years in practice scored slightly lower 4.0 SPD. Nurses with less than 10 years in practice scored from 4.0 to 4.1 SPD. There was no significant difference in SPD by years in practice (Table E-40).

Table 4-11. Comparing regressions by Region/District and by type of Clinical condition.

Table 5

Summaries of Regression Models comparing All Respondents with Regions and Clinical Units

	ALL Respondents			SHR			CDHA			MI			CVA		
Predictors	R Square	Std Coeffs Beta	Sig.	R Square	Std Coeffs Beta	Sig.	R Square	Std Coeffs Beta	Sig.	R Square	Std Coeffs Beta	Sig.	R Square	Std Coeffs Beta	Sig.
Years in Practice	0.000	0.067	0.065	0.001	0.032	0.528	0.004	0.122	0.020	0.020	0.145	0.004	0.016	-0.005	0.928
Hassles	0.223	-0.102	0.018				0.251	-0.158	0.009	0.176	-0.128	0.022			
Positive Attitude	0.451	0.121	0.007												
Unit Orgn	0.570	0.150	0.004				0.510	0.232	0.004				0.553	0.243	0.003
Unit Development							0.517	0.188	0.015						
Leader Values				0.415	0.191	0.004									
Leader Integrity															
Leader Actions	0.591	0.123	0.008										0.595	0.204	0.002
Behavior Culture															
Objective Culture	0.604	0.131	0.004	0.532	0.202	0.001				0.307	0.226	0.000	0.643	0.157	0.026
Fulfill Equity	0.680	0.257	0.000	0.650	0.253	0.000	0.684	0.345	0.000	0.602	0.365	0.000	0.708	0.244	0.001
Pay Equity															
Recognition	0.718	0.281	0.000	0.731	0.412	0.000	0.717	0.239	0.001	0.705	0.403	0.000	0.734	0.245	0.002

i. Dependent Variable: 13 item Sat Perf

Table 4-12. All Predictors of Satisfaction with Performance of Duties.

Appendix 1														
Model Summary (Dependent Variable: SatPerf 13 items-All Independents Entered)														
Model	Independent Variables	R Square	Std. Error of the Estimate	Change Statistics			Std Coeffs	t	Sig.	Correlations			Collinearity Statistics	
				R Square Change	F Change	Sig. F Change	Beta			Zero-order	Partial	Part	Tolerance	VIF
1	Years in Practice	0.000	0.5872	0.000	0.003	0.959	0.070	1.802	0.073	0.003	0.122	0.064	0.839	1.192
2	Quality Ratings of Personnel	0.088	0.5621	0.088	22.222	0.000	0.020	0.476	0.635	0.294	0.032	0.017	0.721	1.388
3	Quality Ratings of Inftrastructure	0.222	0.5203	0.134	39.597	0.000	0.041	0.903	0.367	0.456	0.061	0.032	0.615	1.626
4	Exhaustion 7 items	0.304	0.4930	0.082	27.122	0.000	-0.001	-0.018	0.986	-0.421	-0.001	-0.001	0.456	2.193
5	Moral D 4 items	0.316	0.4898	0.012	4.071	0.045	0.028	0.490	0.624	-0.405	0.033	0.017	0.385	2.601
6	Hassles 5 items	0.336	0.4839	0.019	6.584	0.011	-0.108	-1.888	0.060	-0.472	-0.127	-0.067	0.384	2.601
7	Positive Attitude 4 items	0.479	0.4295	0.143	62.145	0.000	0.108	2.318	0.021	0.538	0.156	0.083	0.588	1.701
8	Unit Develop 3 items	0.562	0.3947	0.083	42.511	0.000	0.082	1.288	0.199	0.574	0.087	0.046	0.312	3.202
9	Unit Orgn 4 items	0.590	0.3828	0.028	15.210	0.000	0.095	1.479	0.141	0.660	0.100	0.053	0.308	3.245
10	Leader Integrity 4 items	0.595	0.3812	0.005	2.977	0.086	-0.073	-0.879	0.380	0.526	-0.060	-0.031	0.182	5.490
11	Leader Actions 4 items	0.601	0.3793	0.006	3.228	0.074	0.123	1.532	0.127	0.526	0.104	0.055	0.197	5.071
12	Leader Values 3 items	0.602	0.3796	0.001	0.570	0.451	0.031	0.387	0.699	0.533	0.026	0.014	0.192	5.197
13	Behavior Culture 6 items	0.607	0.3780	0.005	2.955	0.087	0.029	0.601	0.549	0.502	0.041	0.021	0.529	1.891
14	Objective Culture 5 items	0.615	0.3752	0.007	4.201	0.042	0.114	2.179	0.030	0.550	0.147	0.078	0.466	2.147
15	Pay Equity 5 items	0.615	0.3757	0.001	0.502	0.479	-0.065	-1.597	0.112	0.247	-0.108	-0.057	0.754	1.326
16	Fulfill Equity 6 items	0.690	0.3378	0.075	52.585	0.000	0.277	5.578	0.000	0.650	0.355	0.199	0.514	1.945
17	Recognition 7 items	0.726	0.3184	0.036	28.224	0.000	0.292	5.313	0.000	0.718	0.340	0.189	0.419	2.385
r. Dependent Variable: 13 item Sat Perf Duties (df = 216)														

4.1.5 Structural equation model (SEM)

The SEM was configured to refine the regression model of predicting SPD of the two groups of nurses in Saskatoon and Halifax. The predictors affecting the work environment of nurses were incorporated into the SEM model (Figure 4-2) and the latent variable SPD was used as the outcome variable. The latent variable was created by use of the parceling approach using two subscales; SAPerf6 and SCPerf7- a six item scale and a 7 item scale – representing administrative and clinical aspects of SPD respectively. The latent variables L, OC, US, DD, PA (positive attitude subscale of DD), PE and QR were associated with SPD of nurses. Years of practice was used as a controlling factor and gender was not used as a controlling factor because the majority of nurses were female. It was hypothesized a priori that:

1. Leadership will directly affect DD and will have a moderating effect on DD through US and OC.
2. DD affects PE and QR directly as shown in the SEM diagram.
3. PA, a subscale of DD, stands out independently, providing a mediating path to PE from OC.
4. OC affects SPD directly and through QR acts as a moderating factor between OC and SPD.

5. Similarly, US affects PE, QR and DD as indicated in the SEM diagram.
6. PE directly affects SPD.

In classical SEM, latent variables are analogous to predictors in multiple regression and can serve as outcomes or predictors of other variables depending upon their placement in the SEM model. Schematics (path diagrams) are used to represent measured and latent variables and are used to identify relationships in a SEM model (McDonald & Ho, 2002). Following convention, observed measures are represented as rectangles and latent variables represented by circles. Relationships among observed measures and latent variables are shown by short arrows. Relationships between latent variables are represented by long arrows, either straight or curved. Directional relationships are shown by the arrows.

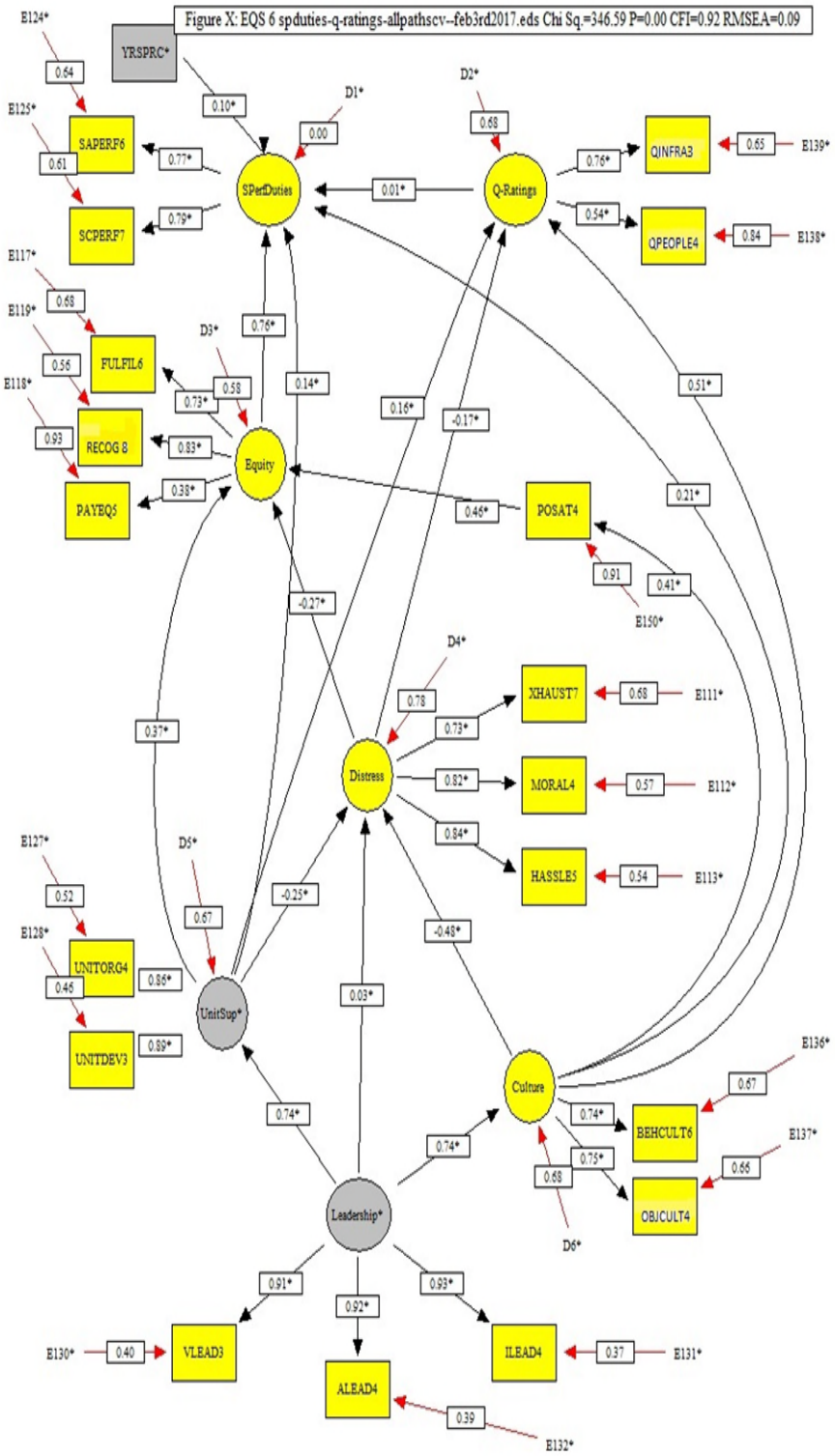

Figure 4-2. EQS Model 1 – Full model.

A multi-layer model (Figure 4-2.) was configured and consisted of 7 latent variables. The EQS model detailed output is included in the Appendix G, Table E-35. The model began with leadership at the base and continued in layers with unit support and culture; distress; equity and positive attitude; and SPD and quality rating. The model appeared to represent an adequate fit to the data (χ^2 346.591 with df =128 and p=.0000). The CFI was 0.916, NFI was 0.875, IFI was 0.917, GFI was 0.851 and the RMSEA was 0.086. SRMR was 0.069. These indices are an adequate fit based on the work of Steiger (1990) and Parry (2017). Leadership was at the base of the model with paths leading to US, Distress and Culture with all three path coefficients being statistically significant at $p < .001$. Two of the three paths had strong coefficients L to US (β = 0.74) and L to Organizational Support (β = 0.74) but the third to DD was very weak (β = 0.03). An intermediate level appeared to exist with four paths from Unit Support to: Equity (β = 0.37), SPD (β = 0.14), QR (β = 0.15), and Distress (β = - 0.25); two paths from Distress to: Equity (β = - 0.27) and QR (β = - 0.17); and four paths from Culture to: Distress (β = - 0.48), Positive Attitude (β = 0.41), SPD (β = 0.21) and Quality Ratings (β = 0.51). All ten intermediate level path coefficients were statistically significant at $p < .001$. An upper level also appeared to exist with a path coefficient from Positive Attitude to Equity (β = 0.46) and a path coefficient from Equity to SPD (β = 0.74). Finally, a very weak path appeared to connect the two dependent variables from QR to SPD (β = 0.01). The upper level paths were also significant a $p < .001$.

4.1.6 Observed variables parceled into latent variables

Each predictor variable (latent variable) was incorporated into the model by use of the parceling method whereby sets of items from questionnaires filled out by respondents formed observed variables, supported by relevant literature on SEM analysis (Yang, Nay & Hoyle, 2010; Matsunaga, 2008; Bandalos & Finney, 2001). In this way observed variables used in SEM are analogous to factors or dimensions of a psychometric measure. In classical SEM, relationships between latent variables can be correlational or directional. Relationships between latent variables are represented by long arrows, either straight or curved. Directional relationships are shown by the arrows.

The first latent variable, *L*, had three observed measures termed *VLead3* (3 items), *ALead4* (4 items) and *ILead4* (4 items) used to incorporate the 11 item leadership scale. All Factor loadings were statistically significant and were 0.91, 0.92 and 0.91 for *VLead3*, *ALead4* and *ILead4,*

respectively. Error terms were 0.40, 0.39 and 0.39 as denoted by E130, E132 and E131 in the diagram for *VLead3*, *ALead4* and *ILead4,* respectively (Figure 4-2). The second latent variable, *UnitSup*, had two observed measures, *Unitorg4* (4 items) and *UnitDev3* (3 items) which were used to incorporate the 7 item scale. Factor loadings were significant and were 0.86, and 0.89 for *Unitorg4* and *UnitDev3,* respectively. Error terms were 0.52 and 0.46 as denoted by E127 and E128 in the diagram for *Unitorg4* and *UnitDev3,* respectively (Figure 4-2).

Similarly, the third latent variable, *Culture*, had two observed measures *Behcult6* and *Objcult5* with 6 and 5 items respectively (Figure 4-2). Factor loadings were 0.74 and 0.75 for *Behcult6* and *Objcult5*, respectively and error terms were 0.67 and 0.66 as denoted by E136 and D137 (Figure 4-2). For paths from *Leadership* to *Culture* denoted by 2, a disturbance of 0.68 denoted by *D6* was observed (Figure 4-2). Furthermore, the path from *Leadership* to *Unit support*, denoted by 1, had a disturbance of 0.67 as denoted by D5 (Figure 4-2).

For the latent variable *Distress*, three measures were observed consisting of; *Xhaust7,* 7 items, *Moral4,* 4 items; and Hassles5, 5 items (Figure 4-2). Factor loadings for the 3 parcels were 0.73, 0.82 and 0.84 for *Xhaust7, Moral4* and *Hassles5*, respectively. The corresponding error terms, denoted E111, E112 and E113, had values of 0.68, 0.57 and 0.54. The path from *Culture* to *Distress* as denoted by *5* had an observed disturbance of 0.78 as denoted by D4 (Figure 4-2). In addition to the 3 observed Distress measures, a fourth independent measure, PostAt4, consisting of 4 items was observed, The path of *Culture* to *Posat4* as denoted by 9 had an observed error term of 0.91 as denoted by E 150 (Figure 4-2).

The path from positive attitude *PosAt4* to professional equity *EQUITY* as represented by 3 observed variable parcels were termed *Fulfil6* (fulfillment equity), *Recog7* (Recognition equity) and *Payeq5* (pay equity). The factor loadings for *Fulfil6*, *Recog7* and *Payeq5* were 0.68, 0.56 and 0.93, respectively and were denoted as E117, E119 and E118 (Figure 4.2). The latent variable *Q-Rating* was represented by two parcels of observed variables; *Qinfra* and *QPeople*. The factor loading of the two observed variables on *Q-Rating* were 0.76 and 0.54, and the associated error terms were 0.65 and 0.54 as denoted by E139 and E138 respectively (Figure 4.2). Satisfaction with performance of duties had two observable parcels of variables *SAPerf6* and *SCPerf7* (Figure 4.2). The factor loadings were 0.77 and 0.79 for *SAPerf6* and *SCPerf7* respectively, and error terms of 0.64 and 0.61 were calculated and denoted by E124 and E125.

Analyses of SEMs were conducted at three levels: firstly, all feasible pathways were specified in the model; secondly, examining mediating pathways between the latent variables within the model; and finally, eliminating weak pathways to yield a parsimonious model.

The feasible pathways support the majority of hypothesized relationships among the latent variables. Predicted relationships between *Leadership* and *Distress* were composed of one direct and two mediating pathways by use of *Unit Support* and *Culture*. The direct path strength of association from *Leadership* to *Distress* was relatively weak (β = 0.03) (Figure 4-2). However, *Distress* was influenced by the mediating path from *Leadership* through *Unit Support*. The pathway coefficient from *Leadership* to *Unit Support* was strong (β =0.74). In addition, the negative path coefficient from *Unit Support* to *Distress* (β = -0.25) supports our assumption that increased *Unit support* reduces *Distress*. Similarly, the path coefficient from *Leadership* to *Culture* (β =0.74) was strong and supports the assumption that solid leadership improves organizational culture. The path coefficient from *Culture* to *Distress* was negative (β = -0.48) and supported our assumption that strong organizational culture reduces distress of employees. The direct path co-efficient from *Leadership* to *Distress* was not strong and might be due to the two strong paths mediated through *Leadership– Unit Support* and *Culture*. The path from *Unit Support* to *Equity* had a relatively strong co-efficient (β =0.37; Figure 4.2) and is in-line with current theory of PE. The relationship between *Professional Equity* and SP was strong (β =0.76) and is congruent with current theory on job satisfaction and professional equity. The observed relationship between *Unit Support* and SPD was moderate (β =0.37; Figure 4.2). The relationship between *Distress* and *Q-Rating* was moderate (β =-0.17) and was in congruence with current theory suggesting increased distress reduces the quality rating. The path from *Positive Attitude* to *Professional Equity* was strong (β =0.46) and confirms previous findings. In summary, when controlled *Years of Practice*, SP of nurses in Canadian hospitals is affected by *Leadership* and *Distress* and is mediated by *Unit Support* and *Organizational Culture* which are mediated through *Distress* and *Professional Equity* as indicated Figure 4.2.

A more parsimonious model was generated by eliminating weak pathways from the developed model. Goodness-of-fit was a slightly lower but remained adequate (Figure 4-3). EQS model output printout is included in Appendix G, Table E-36.

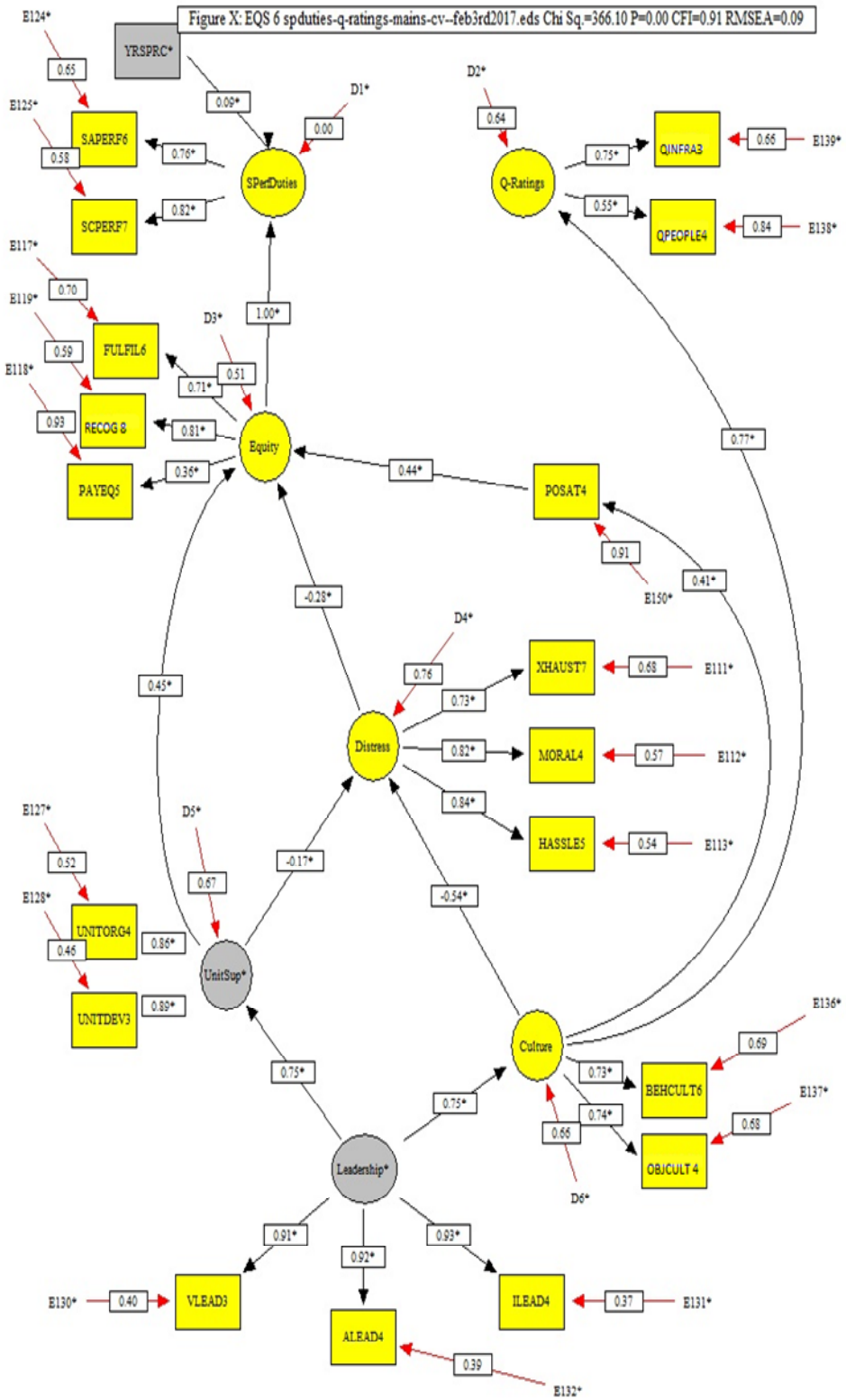

Figure 4-3. EQS Parsimonious Model.

The less complex multi-layer model (Figure 4-3) adequately fit the data (χ^2 = 396.54, df =136, *p*=.0000). As calculated, CFI, NFI, IFI, GFI, RMSEA and SRMR were equal to 0.900, 0.857, 0.901, 0.836, 0.091 and 0.078, respectively. These fit indices were adequate as per the recommendations of Steiger (1990) and Parry (2017). *Leadership* formed the base of the model with statistically significant paths leading to *Unit Support* and *Culture* ($p < .001$). *Unit Support* and *Culture* had paths with strong coefficients from *Leadership* to *Unit Support* ($\beta = 0.75$) and *Leadership* to *Organizational Support* ($\beta = 0.75$). The intermediate level had two paths from *Unit Support* to *Equity* ($\beta = 0.45$) and *Distress* ($\beta = - 0.17$); and a single path from *Distress* to *Equity* ($\beta = - 0.28$). Additionally, three paths from *Culture* were observed to; *Distress* ($\beta = - 0.54$), *Positive Attitude* ($\beta = 0.41$), and *Quality Rating* ($\beta = 0.77$). All five intermediate path coefficients were statistically significant ($p < .001$). An upper level was evident between *Positive Attitude* and *Equity* ($\beta = 0.44$) and a strong relation was observed between *Equity* and *Satisfaction with Performance* ($\beta = 1.00$) ($p < .001$).

4.2 Summary of findings

A hierarchical regression model based on data collected from two similarly sized health regions of Canada was developed to predict SPD of Canadian nurses. The regression model explained 71.8% of variance using 8 predictor variables. The SEM model developed extended the regression model by incorporating a greater number of predictor variables with associated directional vectors finding that:

1) Nurses with greater perceived US and OC scored higher SPD and lower DD, as measured through Xhaust7, Moral6, and Hassles5; and

2) Professional equity of nurses was affected by distress levels and had a mediating effect on SPD.

Evidence presented here supports the hypothesis that positive L, higher organizational support and culture, reduces distress scores of nurses. Moreover, lesser stress levels were indicative of greater PE scores, a leading indicator of greater SPD of nurses. Detailed discussions based on the results of the regression analysis and structural equation modeling is provided in the next chapter.

Chapter 5: Discussion

Preface

Factors affecting Satisfaction with the Performance of Duties (SPD) of nurses working in Canadian hospitals were investigated. Improvements in the work environment of nurses are important because they directly influence patient care outcomes whereby higher satisfaction leads to improved care. Employees with greater measures of job satisfaction lead healthier and improved lives at home which results in lower medical costs for employers (Suma & Lesha, 2013). Current collective bargaining agreements of nurses in Canadian hospitals limit the ability of individual hospital administrators to provide traditional rewards to improve job satisfaction such as increased pay, benefits, choice of shifts, promotions and professional development opportunities. Therefore, factors which impact SPD, which can be modified by hospital administrators under current restrictions, were investigated.

A twin-site cross-sectional design was used to test data collected from nurses working in cardiology and stroke wards of two similar sized hospitals in the Saskatoon Health Region and Capital District Health Authority in Halifax. Regression and structural equation models (SEM) were developed to analyze relationships between work environment and SPD. SEM analysis confirmed and extended findings of the regression model. This is followed by a discussion of the impact of work environment factors on the satisfaction with the performance of duties. In addition, contextual factors of the work place which contribute to SPD of nurses are discussed. Implications of these results from a health policy and professional education perspective and limitations of the applied method are discussed. The chapter concludes with a discussion of directions for future research.

5.1 General Discussion

At the time this research was carried out, very few studies investigated SPD of Canadian nurses in hospital settings. In their 2005 and 2012 systematic reviews, Lu et al., identified that the lack of causal models incorporating moderators of job satisfaction in nursing is a significant shortcoming, preventing the development of interventions to improve nurse retention (Lu, While & Barriball, 2005; Lu et al., 2012, Lu et al., 2019). The current global shortage of nurses highlights the need for understanding the impact of the factors identified supporting SPD of

nurses.

An understanding of factors which affect SPD of nurses in Canadian hospitals is important as managers of health regions are faced with unprecedented financial constraints while aiming to maintain and improve quality of care (Blegen, Goode & Reed, 1998; Corey-Lisle et al., 1999; Jones & Gates, 2007; Greenglass & Burke, 2016). In a major Canadian nursing policy paper, Berry and Curry (2012) stated "*following budget driven cuts to nursing education in the 1990s the number of registered nurses (RN) did not return to the 1993 level until 2003, and because of the rising population, we still have not recovered the nurse to population ratio we enjoyed in early 1990s*". Furthermore, Murphy et al. (2012) predicted that Canada will have a shortage of 60,000 full time equivalents (FTE) in RN positions by 2022. As the impact of nursing shortages and financial constraints exacerbate dissatisfaction, distress and intention of nurses leaving the profession; managerial strategies to improve the working conditions of nurses is critical to ensure retention of sufficient number of nurses in order to improve quality patient care and positive outcomes (Roche, Laschinger & Duffield, 2015).

Nursing quality and patient outcomes are intimately intertwined. Job satisfaction of nurses and patient satisfaction with nursing care are related and are the two most important indicators of nursing quality (Aiken et al., 2002; Tzeng & Ketefian, 2002; Aiken et al., 2012; Laschinger & Fida, 2015). Nursing turnover rates are a recurring issue and continue to impact patient outcomes and satisfaction (Hayes et al., 2006). The replacement of a nurse incurs large financial expenses on a health care organization as the new position must be advertised, and candidates recruited, interviewed, selected and trained. In addition, these organizations lose relevant institutional knowledge and intellectual capital and incur potential productivity losses associated with nursing turnover (Contino, 2002; Jones & Gates, 2007). For example, one in five nurses working in Canadian hospitals leave their job each year resulting in an estimated per capita cost to institutions of $25,000 - $67,100 (O'Brien-Pallas et al., 2010; Jones & Gates, 2007; Jones, 2008; Stone et al., 2007). A number of studies have identified lack of satisfaction with job is strongly associated with the intention to leave their job (Shields & Ward, 2001; Aiken et al., 2002; Tourangeau & Cranley, 2006). Therefore, it is important to improve job satisfaction particularly in light of current and anticipated nurse shortages.

The meta-analysis conducted by Irvine and Evans (1995) noted *"Of the variables related to*

nurse job satisfaction in the present study, the work content and work environment variables appear to have a stronger relationship with satisfaction than either the economic or individual difference variables. Administrators and nurse managers have more control over work content variables (through job design), or work environment variables (through appropriate leadership and human resource management practices), than they have over external labor market factors or internal, individual factors." Therefore, identifying nursing work environment factors which can be improved by better management processes to enhance SPD of hospital nurses is important. It is important to recognize that nurses working on the same clinical unit are exposed to the same environmental factors, even if those factors affect individual nurses in different ways, it is likely that there are at least some shared perceptions about the clinical unit; therefore, group interaction processes conducive to improved SPD can be identified.

The work of Irvine and Evans (1995) is important because it identified the importance of factors related to nurses' job satisfaction that are clearly under control of Canadian health care administrators and managers. In 1995 there was dramatic downsizing at hospitals resulting in loss of nursing jobs at an unprecedented rate. Similarly, when this twin-site study was conducted, downsizing and restructuring were pervasive in North American hospitals. This dissertation is an effort to explore factors associated with job satisfaction which can be influenced by health care managers.

Tovey and Adams (1999) found that differences in staff morale at hospitals are primarily associated with management styles and secondarily with human resource policies and practices. Using age as a control variable has yield varying results. In a study by Ruggiero (2005) age was not significantly related to job satisfaction. However, Ingersoll et al. (2002), found that age was related to job satisfaction for nurses below the age of fifty. In this study, years of practice (YP) was used as a control variable rather than age with the aim to mitigate the effect of beginning a nursing career at different ages. A systematic literature review completed in 2009 by Utriainen & Kyngäs concluded that interpersonal relationships among nurses and duties related to providing patient care were associated with job satisfaction. However administrative and coordinating duties did not contribute to job satisfaction (Utriainen & Kyngäs, 2009). The conclusions of a recent qualitative study by Atefi, Abdullah, Wong, & Mazlom, 2014 which can be applied to Canadian nursing environment are that improving job satisfaction is dependent on: better team cohesion, sufficient medical resources, clear delineation of responsibilities, good patient and

doctor perceptions, strong management skills. In addition, the motivational factors of: greater clinical autonomy; opportunities for professional development; and specific task descriptions, contributed significantly to nurses' job satisfaction (Atefi et al., 2014).

In this study, two similarly sized Canadian hospitals were used to evaluate cross-level effects within the nursing work environment. Moreover, the use of a multilevel SEM facilitated the simultaneous evaluation of relationships between dependent and independent latent factors at different levels and has the advantage of approaching causality while including the assessment of measurement error (Byrne, 2001); thereby, creating a better representation of how work environment is associated to nurses' SPD.

5.2 Effect of work environment on SPD of nurses

This is the first study to test the application of a regression and structural equation model to figure out the factors affecting the SPD of nurses in Canadian hospitals.

5.2.1 Effects of Daily Distress on SPD of nurses

The results of the regression analysis, after controlling for years in practice, demonstrated that hassles and positive attitude are related to Daily Distress (DD) and explained 22.3% and 22.8% (cumulatively 45.1%) of variance in SPD of nurses. This is similar to previous findings of meta-analytic studies (Blegen, 1993; Lu et al., 2012; Zangaro & Soeken, 2007). Lack of job satisfaction is the most frequently cited reason for turnover of nurses (Yin & Yang, 2002; Irvine & Evans, 1995); therefore, warranting attention. Wu et al (2007) also found that there was a positive and significant relationship between job stress and intention to quit. Many nursing studies on intention to quit have demonstrated associations between lack of support and deterioration of emotional and mental health of nurses (Cavanagh & Coffin, 1992; Tyler & Cushway 1995; 1998; Kalliath & Morris, 2002; Piko, 2006; Flinkman, Laine, Leino-Kilpi, Hasselhorn, & Salanterä, 2008; Flinkman, Leino-Kilpi & Salanterä, 2010; Leiter & Maslach, 2009; Meeusen, Van Dam, Brown-Mahoney, Van Zundert & Knape, 2011).

Stress in the work environment has been studied extensively for high stress occupations such as policing, teaching, correctional workers and nurses (Tyler & Cushway, 1995; Greenglass & Burke, 2016; Cañadas-De la Fuente et al., 2015; Sharma, Dhar & Tyagi, 2016; Schaufeli & Maslach, 2017). At a time where rising costs, shrinking budgets, and personnel shortages are

common, it is essential to provide a positive work environment to ensure worker retention and productivity (Griffin, Hogan, Lambert, Tucker-Gail, & Baker, 2010).

As nursing is identified as a high-stress occupation (Zboril-Benson, 2016; Khamisa, et al., 2015), it is important for hospital administrators to understand mechanisms by which to reduce daily distress levels of nurses deployed on hospital wards. Researchers have found that job stress negatively affects the employees and the organization and is a major cause of burnout (Jamal & Baba, 2000; Maslach, Schaufeli & Leiter, 2001; Hayes, Douglas & Bonner, 2015; Khamisa et al., 2015; Griffin et al., 2010).

In a major study of 2,000 direct care nurses in the province of Saskatchewan, 41.7% (n=450) of the participants had considered abandoning their nursing career and of these, 227 cited stress and overwork as the two most important factors (Zboril-Benson, 2016). A South African study by Khamisa et al. (2015) surveyed 1200 nurses in four hospitals on work related stress, burnout and job satisfaction. Differences in job satisfaction were explained by: personal burnout and patient care stress, staff issues, job demands, lack of support and overtime, controlling for age, gender, education, experience and hospital type. Burnout was the most important factor, explaining the most variance in the mental health of nurses (Khamisa et al., 2015). In a 2010 study on Correctional Staff in the United States, it was found that job stress was significantly positively correlated with *"depersonalization"* and *"emotional exhaustion"* (Griffin et al., 2010).

By the use of SEM analysis, Daily Distress had three dimensions incorporated in the parsimonious model Exhaustion, Moral and Hassles. The factor loading for the 3 dimensions were strong 0.73, 0.82 and 0.84 for Exhaustion, Moral and Hassles, respectively. The path coefficient from Daily Distress to Professional equity was -0.28 and supports current theory which suggests increases in daily distress scores are associated with reductions in professional equity. The factor loadings associated with the three dimensions - Exhaustion, Moral Distress and Hassles – are in-line with the recognized subscale of nursing stress. Currently nurses working in Canadian hospitals are likely to have inadequate support in staffing, equipment and supervisory levels, and as a result this leads to exhaustion and moral stress. When these factors are compounded by the daily hassles experienced by nurses this leads to high levels of stress.

5.2.2 Effect of Positive Attitude on SPD of nurses

As described earlier, one of the most accepted definitions of job satisfaction is by Locke (1976)

". . . a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". As determined by Saari and Judge (2004), the majority of human resources studies overlook satisfaction with duties performed and the influence it has on an individual's job satisfaction. Work of Adler and Weiss (1988) first introduced dispositional theories of job satisfaction. A number of studies have explored the stability of job satisfaction scores over the course of working life, and it has been found by several researchers that identical twins reared apart experienced relatively similar levels of job satisfaction (Staw & Ross, 1985; Staw, Bell & Clausen, 1986; Arvey, Bouchard, Segal, & Abraham, 1989). A meta-analysis investigating personality dispositions in terms of five factors: *"Openness"*, *"Conscientiousness"*, *"Extroversion"*, *"Agreeableness"* and *"Neuroticism"* and job satisfaction demonstrated that job satisfaction was most positively correlated with Conscientiousness (+0.29) followed by Extroversion (+0.25), and then Agreeableness (+0.17) and not correlated with Openness (0.02) and negatively correlated with Neuroticism (-0.29) (Judge, Heller & Mount, 2002).

The dispositional theory of job satisfaction does not offer a full explanation (Davis-Blake & Pfeffer, 1989) nevertheless; job satisfaction among employees can be partially explained by disposition and temperament (House, Shane & Herold, 1996; Shane, Herold & House, 1996). More recently by Robbins and Judge (2015) stated that attitudes and behaviour may offer explanations on how satisfied people are with their jobs and performance. Furthermore, Landis, Vick and Novo (2015) concluded that there is a positive correlation between attitudes and job satisfaction. More recent studies highlight the relationship between *"growth mindset"*, *"transformational leadership"* and *"engagement at work"* linking organizational climate and employee engagement (Bellou, 2010; Back, Steinhauser, Kamal & Jackson, 2016; Caniëls, Semeijn & Renders, 2018; Albrecht, Breidahl & Marty, 2018).

In the SEM analysis, all the dimensions of Daily Distress : Hassles, Moral Distress, Exhaustion and Positive Attitude were found to be inter-related yet distinct, but Positive Attitude was an independent dimension of DD. Positive Attitude (PA) of the employees generally supports higher professional equity and PA scale consists of items related to personality attributes such as disposition, temperament and self-discipline.

5.2.3 Effect of unit support on SPD of nurses

The results of regression modeling revealed that unit organization, a dimension of unit support,

explained 11.9% of the variance (Beta = 0.150, p = 0.004 As demonstrated in the results, the findings of this dissertation support and build upon conclusions of recent study results. Relationships between organizational structure of acute hospital wards, nurses' personal characteristics and nurses' job characteristics have been investigated in a number of studies (Morrison, Jones & Fuller, 1997; Mueller & McCloskey, 1990; Tovey & Adams, 1999; Laschinger et al., 2014; Laschinger, Zhu & Read, 2016; Al Azzam, Abu Al Rub & Nazzal, 2017). In this study, unit organization subscale measured how a unit is organized to successfully complete assigned work effectively, availability of resources to adopt best practices, the ability of staff to achieve group consensus when dealing with major issues and whether the unit organizational structure is conducive of encouraging nurses to contribute their ideas.

Effective unit organization under a good unit manager who consults with staff and provides positive feedback and whose leadership is highly rated is responsible for increasing satisfaction with careers in nursing (Duffield, Roche & Blay, 2011). Laschinger et al., (1999) found that a strong leader in nursing units can create positive working environments that remain attractive to recruit new nurses and retain the existing ones.

The importance of the patient care unit as an organizational unit has been demonstrated. Unit culture has been established to effect nurses' behaviour and perceptions of work environment (Thomas, 1992; Adams & Bond, 2000). An Australian study by Duffield, Roche, O'Brien-Pallas, Catling-Paul and King (2009) concluded that the leadership style of a nursing unit manager affects staff retention. A strong unit leader can create a positive work environment. A study by Kirwan, Matthews and Scott (2013) found that positive work environments also enhance patient outcomes. A study of Belgian hospitals consisting of 546 staff nurses from 42 units found significant relationships between nursing practice environments, burnout, job satisfaction, and quality of care. Poor ratings of unit level management by nurses, negatively affects nurses reports of the quality of care (Van Bogaert, Clarke, Roelant, Meulemans & Van de Heyning, 2010; Van Bogaert et al., 2014).

In the SEM analysis two dimensions of Unit Support (US); organization and development were incorporated into the model. Thus better organizational support is positively correlated to professional equity and a concomitant decrease in daily distress levels.

Unit Development consists of: staff professional development; empowerment of staff to develop

skills and knowledge; and availability of resources to learn from best practices. These three items are directly linked to providing excellent support for the development of the unit. The Unit Organization consisted of: the work of the unit is well organized; staff in the unit is empowered to take initiative to improve patient care; staff are empowered to achieve group consensus on issues; and they are encouraged to contribute fresh ideas. These four processes, centered on unit organization, are well supported by current theory.

5.3 Effect of leadership on SPD of nurses

The Leadership scale used in this study had three dimensions: the values of the leader; integrity of the leader; and actions of the leader, as perceived by nurses. Many scholars investigating organizations have demonstrated that the leadership style of a supervisor affects the job satisfaction of employees reporting to them (Medley & Larochelle, 1995; Boamah et al., 2018). Transformational leadership styles are positively correlated with higher job satisfaction scores reported by unit nurses (Fallatah & Laschinger, 2016; Bawafaa et al., 2015; Boamah et al., 2018).

Many of the nursing studies cited here have covered factors affecting job satisfaction of nurses. Similarly, there have been many studies exploring job satisfaction of workers employed in various non-healthcare related organizations (Lok & Crawford, 1999; Saeed, Waseem, Sikander & Rizwan, 2014; Demirtas & Akdogan, 2015; Bogler & Nir, 2015). These studies have investigated relationships between leadership style, organizational commitment and job satisfaction. Moreover, strong positive relationships between job satisfaction and organizational commitment have been reported over time by many researchers (Iverson & Roy, 1994; Williams & Anderson, 1991; Top, Akdere & Tarcan, 2015; Atmojo, 2015; Read & Laschinger, 2015; Saleem, 2015).

The subscale Leader Actions (LActions), from the Leadership Scale, used in the regression model explained 2.1% of the variance ($\beta = 0.123$, $p = 0.008$) in SP of nurses. Two studies by Upenieks (2003 a, b) compared nursing leadership and job satisfaction levels among US magnet and non-magnet hospitals supported Kanter's structural theory of organizational behavior (Upenieks, 2003 a, b).

A study of practice environment of nurses in Ontario, found that practice enviroments that empowered nurses provided more opportunities for nurses to influence quality of patient care

and ultimately job satisfaction (Laschinger, & Fida, 2015; Shirey, 2009). A 2006 study by Smith, Tallman and Kelley (2006) surveyed 123 nurses from 13 hospitals in western Canada and found that autonomy, management support and nurse-manager relations are important factors contributing to job satisfaction of nurses. Fallatah and Laschinger (2016) also found that authentic leadership positively affected job satisfaction and performance. This study found that values, actions and integrity of leaders were positively correlated with improved Unit Support and Organizational Culture.

5.4 Effect of organizational culture on SPD of nurses

Edgar Schein originally defined Organizational Culture as a "*pattern of shared basic assumptions that was learned by a group as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems."* (Schein, 2004). A recent study by Manojlovich and Ketefian (2016) found that organizational culture was a significant predictor of job satisfaction.

More recently, Trevino and Nelson (2011) elaborated the nature of organizational culture*: "The organizational culture expresses shared assumptions, values, and beliefs and is manifested in many ways, including formal rules and policies, norms of daily behavior, physical settings, modes of dress, special language, myths, rituals, heroes, and stories"* and demonstrated the importance of culture in maintaining a healthy work environment. An American study of leadership and organizational culture, found that transformational and transactional leadership styles support organizational effectiveness (Casida & Pinto-Zipp, 2008). In addition, a recent study of nurses in Egypt concluded that positive organizational cultures are associated with greater innovations at work (Kamel & Aref, 2017).

In the parsimonious SEM model, Organizational Culture consisted of the behaviours of: employee or unit rewards for contributing to innovations; well organized patient care; rewarding employees who consistently provide a high standard of care; and learning from other organizations. These positive attributes of Organizational Culture contribute to improved work environments of nurses who in turn will be less stressed. Organizational Culture also had objective items related to: cooperation among units to solve problems; the use of objective standards to improve patient care; participation in research; and a commitment to using best

industry practices. Specific objectives are important to work culture as they help to improve ward environment and thereby reduce stress levels of nurses. The factor loadings of the two dimensions were found to be highly significant. This study demonstrated that better Organizational Culture helps to reduce Daily Distress levels.

5.5 Effect of professional equity on SPD of nurses

The regression model demonstrated the relatively greater importance of the fulfillment and recognition dimensions of equity; and lesser but significant role of pay equity, on SPD. Previous researchers also found that job satisfaction and equity are related to pay (Blegen, 1993; Perry, 1992; Singh & Loncar, 2010). Dobson et al. (2005) measured professional equity through the use of three dimensions, financial, intrinsic and recognition equity. Intrinsic rewards are the fulfilling and gratifying aspects of the job itself. Extrinsic rewards are either tangible or intangible such as respect, appreciation and recognition for effort.

Adam's equity theory considers that a person evaluates his or her rewards in a job primarily by comparison with their inputs to that job and what they receive or outcomes from doing that job; and secondarily by comparison with the inputs and outcomes of others. When an individual achieves a balance between contributions and rewards, satisfaction results. When a balance is not achieved, then dissatisfaction results and can lead to distress (Borkowski, 2009). A meta-analysis by Blegen (1993) of nurses in hospital settings identified recognition as an important factor associated with job satisfaction. Similarly, personal fulfilment and recognition were identified in this study as factors associated with job satisfaction. The SEM model demonstrated strong relationships from Equity to SPD indicating that Equity positively affects nurses SPD.

The SEM model corroborated the findings of the regression model with respect to the dimensions of equity with higher factor loadings for fulfillment and recognition than for pay equity. The significantly lower loading for pay equity is likely due to the nurse collective bargaining agreements whereby pay in Canadian hospitals has little flexibility and more or less standardized with regional differences to reflect the general labour market statistics. Moreover, Due to the collective bargaining process, nurses in Canada are significantly better paid than in many western developed countries, and are now paid as well or better than other professions with similar educational preparation. However, loadings for fulfillment and recognition subscales were strong and were in-line with literature which indicates that delivery of worthwhile service

to clients (patients, i.e. fulfillment) and adequate professional recognition drives professional equity of employees.

Cogently, the path coefficient from PosAt4, the positive attitude dimension of Distress, to Professional Equity (PE) was 0.44 supporting current theory whereby increases in PosAt4 scores are associated with increased PE. PosAt4 covers 4 items related to feelings of: excitement for work; ability to concentrate on tasks to be completed; control of day-to-day work activities; and confidence in working at a high standard. An employee with a positive attitude towards work is naturally more confident in their ability to meet the needs of their patients at a higher standard than those employees without positive attitudes about their work.

5.6 Limitations

The limitations of the current study are primarily those associated with cross-sectional studies. Because exposure and outcome are measured simultaneously there is no temporal relationship between exposure and outcome. Without measurements at two points in time or more, it is not possible to establish a temporal relationship; and therefore, a true cause-effect relationship cannot be established. In this study, SEM is not used to identify causative relationships; rather they are used to test theoretical relationships. In applied research, SEM can be referred to as latent-variable analysis because derived models establish relationships between "unobserved" variables. Therefore, theory-driven relationships can be hypothesized and tested by use of SEM models (Hoyle, 2012; Grapentine, 2000; Schumacker & Lomax, 2010).

In deciding on which factors that affect SPD should be included, some concepts were not adequately captured. The questionnaire had items on team care and coping and these were only moderately correlated with SPD and thus were not significant predictors. Intention to leave was not included in the questionnaire for length reasons and tangential relationship to SPD.

In the current study, theoretical and empirical relationships were proposed for the hypothesized model. A multi-level SEM was used to assess proposed cause-effect relationships among various factors associated with SPD of nurses. Therefore results of this study are not to be used as a conclusive evidence of the cause-effect relationships without further longitudinal studies.

As in this study where self-reported questionnaires are used to collect data at a point of time from the same participants common method variance might occur. Common method variance

occurs routinely in cross-sectional psychometric surveys referring to variances that can be attributed to the methods of measurement and not the variances due to the constructs used to measure the concepts (Chang, Van Witteloostuijn, & Eden, 2010; Podsakoff, MacKenzie, Lee & Podsakoff 2003; Podsakoff, MacKenzie & Podsakoff, 2012). Bias arising from measurement methods or data source were partially mitigated by collecting data from two separate wards (stroke and cardiology) from geographically diverse locations (Saskatoon and Halifax), and by the use of properly designed and psychometrically valid questionnaires. It would have been desirable to conduct stronger multi-level modelling, but the choice of only two clinical conditions in two health systems was governed by logistics and funding. A final consideration was slight differences in terminology between the clinical conditions and the regions. These difference affected categorical variables in describing the nature of the nurses' responsibilities, the specific types of quality assurance activities carried out and the profile of duties, but eight iterations of the wording used for the psychometric measures were circulated and reviewed over a year long period resulting in uniform measures in all four sub-groups of nurses.

A random sample is the best option for regression-based analyses, because convenience sampling might introduce various biases such as self-selection bias etc. Moreover, the variability and bias cannot statistically calculated or controlled in the case of convenience or purposive sampling (Acharya, Prakash, Saxena & Nigam 2013; Burns & Grove, 2009,). However, in this study a full census sampling design was used for the entire population of nurses working in two wards in two health regions. Theoretically it may have been preferable to include only RNs in the study; however, interest in this study was high as it focused on quality and Licensed Practical Nurses (LPNs) wanted to participate. The results showed that their responses did not differ significantly with those of RNs. Though response rates were promising, self-selection bias might be present whereby nurses with more confidence in the quality of their work and work environment might have been more likely to respond to survey questionnaires. In addition, the possibility exists whereby some nurses with concerns related to their workplace might have utilized the study as an opportunity to identify these issues and inform hospital administrators.

For many years, health administrators have used surveys of nurses to inform policy decisions; however, participant or response rates have generally been poor (VanGeest & Johnson, 2011; Cook, Dickinson & Eccles, 2009; Cull et al., 2005; Hill, Fahrney, Wheeless & Carson 2006; McLeod, Klabunde, Willis, & Shark, 2013; Ulrich & Grady, 2004). The response rate of nurses

in this study (63.61%) was deemed sufficient and representative of the population as it was similar to previous studies (Cook, Dickinson, & Eccles, 2009; Badger & Werrett, 2005). Overall, results of this study should be interpreted with regard to limitations discussed above and it is clear that more studies, specifically longitudinal studies, are needed to mitigate these limitations and to provide more conclusive evidence on cause-effect relationship of the factors affecting the SPD of the nurses.

5.7 Implication of findings

5.7.1 Nursing practice and health care management

The results of this dissertation suggest that work environments which are characterized by: positive Organizational Culture (OC); reasonable levels of Daily Distress (DD); strong Unit Support (US), authentic Leadership (L); high levels of Professional Equity (PE) give rise to high Satisfaction with Performance of Duties (SPD) and high Quality Ratings (QR). Even under constrained budgets, health administrators can improve working conditions conducive to effectiveness and thereby increase SPD of nurses. By creating optimum work environments by focusing on modifying factors such as L, OC, US, PE, QR and reducing DD it is possible to positively affect the SPD of nurses.

The findings of this dissertation identify important characteristics of a healthy work environment and provide health care managers with important information as they continuously aim to improve SPD of nurses. Leadership teams can implement techniques which support authentic leadership and structural empowerment initiatives that address dimensions of opportunity, transparency in planning, access to information, resources and support which were identified as supportive of improved SPD of nurses. Better orientation, mentoring by seasoned nurses or career coaches might improve unit support which in turn helps to reduce daily distress experienced by nurses. Providing easy access to online internal and external employee assistance programs, enable nurses to make better patient care decisions; thereby reducing daily distress levels. Innovative practices, as presented above, can be implemented to better support staff and can be met by adequately resourced support systems.

Encouraging empowering actions by staff supported by unit managers such as changing assignments to ensure that growth opportunities arise from the performance of daily duties on patient care units (Morrison, Jones & Fuller, 1997; Laschinger et al., 2010) can positively affect

SPD. Studies of magnet hospitals in USA have highlighted the importance of having a nurse director with a senior position at the senior management level in order to support staff retention and high quality nursing care. Magnet hospital studies found that nurses would like to work at hospitals which permit them to apply their professionalism and they can make changes related to their area of work without too many levels of bureaucracy (Upenieks, 2002; 2003). Similarly, recent studies have demonstrated the importance of transformational leadership and positive structural empowerment. (Upenieks, 2002; 2003; Upenieks & Abelew, 2006; Aiken, Smith & Lake, 1994; Aiken, Havens & Sloane, 2000; Wilson et al., 2015; Laschinger & Fida, 2015; Khan, Griffin & Fitzpatrick, 2018).

With proper support and incentives, health administrators might empower nurses to be more involved in committees at various levels such as at the unit/ward level, occupational health and safety committees and institutional level employee wellness committees. Involvement in these committees also improves self-esteem, boosts recognition equity and thereby improves Professional Equity. Participation on committees of various levels can help employees learn new inter-personal and leadership skills. In addition, problem solving skills can be improved by participation on various committees operating at different levels (i.e. ward to the institutional level). Professional nurse educators and organizational development experts focused on change management can be used to develop planning and change management skills. As frequent workplace restructuring is a major cause of decreases in work place moral, formal exposure to change management methodology can effectively be used to mitigate these issues. Involvement of nurses in developing management practices and general policies can inculcate ownership in proposed changes in contrast to top-down changes which impact morale negatively.

Inclusion of nurses in quality improvement initiatives and other work place wellness committees can aid improvement of SPD. Involvement in purchase decisions related to their job, such as ward furniture and other common bedside equipment, positively affects morale and acceptability of new purchases. Comprehensive organizational support to provide a healthy workplace generally includes; health information education, smoking/alcohol/drug cessation programs, exercise and fitness activities, availability of healthy foods in the cafeteria, weight control measures, stress management, backcare, lift-transfer-repositioning training, prevention, early detection and screening of serious diseases, professional development opportunities and child care facilities (Secker & Membrey, 2003; Cleary & Walter, 2005). In contrast to some studies,

Pearson, Upenieks, Yee and Needleman (2008) found that both top-down and bottom-up approaches can be successful for spreading innovation strategies on patient care units.

Productivity increases can be achieved by implementing principles developed in industrial applications, the most famous of which are Toyota's continuous improvement and "Productive Ward: Releasing Time to Care" (RTC) program of the National Health Service Program (NHS) in the United Kingdom (White, Wells & Butterworth, 2014; Van den Broek, Boselie & Paauwe, 2014; White, Butterworth & Wells, 2017). The RTC program is designed to improve productivity of nurses and allow for more time for patient care, launched in England in 2007.

The RTC program rests on LEAN methodology, originally developed by the Japanese automobile industry to refine processes and reduce waste. LEAN, applied to health care the fundamentals are to understand what patients value and then articulate services that deliver *"the right things to the right place, at the right time in the right quantities"* (Wright & McSherry, 2013; NHS Institute Worldwide, 2015; Proudlove, Moxham & Boaden, 2008; Radnor, Holweg & Waring, 2012; Wilson, 2009; Morrow, Robert, Maben & Griffiths, 2012). A 2013 Belgian study by Van den Heede et al. (2013) concluded that leaders with a participative management style who supported professional development programs for nurses reduced intentions to quit. Introduction of programs such as the Productive ward and LEAN require meaningful involvement of frontline nurse, and also, in unionized environments, partnering with nurses' unions. For example, White, Wells and Butterworth worth (2014) study and another study in 2014, suggested that to effectively implement productivity programs such as RTC meaningful involvement and consultation with nursing leaders and staff take place (White, Wells & Butterworth, 2014; Van den Broek, Boselie & Paauwe, 2014).

Nurses who abandon their careers early have cost health care organizations in the United States about $1.4 to $2.1 billion each year (Kovner, Brewer, Fatehi & Jun, 2014). Success in keeping nurses in their careers required an understanding how the capacity to deliver high quality care affects job satisfaction and prevent job dissatisfaction (Pasarón, 2013; Galletta et al., 2016).

5.7.2 Nursing practice and policy

This dissertation provides evidence to support factors associated with SPD of nurses and results can be used by policy makers to enable hospital administrators to improve work environments. Adequate resources can be allocated to the identified factors contributing to SPD of nurses to

ensure better retention and job satisfaction and result in improved quality of patient care and safety. The landmark research of Tarlov (1999) expressed a logical framework to improve population health, with public policy processes in two phases: 1) generating consensus among public constituencies based on problem identification, progress to expressions of values leading to decision-making contexts; and 2) taking policy action, progressing to interest group activation, and adoption of and development of regulations. Tarlov's findings led to the Federal Office of Nursing Policy, opened in 1999 by Health Canada for the purpose of positioning nurses more prominently (Villeneuve, 2017; Shamian & Shamian-Ellen, 2011).

In 2008 a pilot program started in Saskatchewan, "The Productive Ward: Releasing Time to Care" (RTC) and continued as a mandated program between 2010 and 2012 to act as a mechanism for engaging units to work cooperatively in quality improvement work (Hamilton et al., 2014). The RTC results can guide policy makers in selecting appropriate proposals to ensure that patient care programming decisions are informed by theory and evidence-based approaches.

In addition, findings of this dissertation can be used by policy makers to influence the development of funding frameworks at federal and provincial levels similar to the First Ministers Accord in Health Care Renewal (2003). Furthermore, these results can be used by accrediting agencies for hospitals, such as Accreditation Canada and the Joint Commission in the USA. In Canada, the Canadian Federation of Nursing Unions (CFNU) and Canadian Nursing Association (CNA) collaboratively established the Quality Workplace– Quality Healthcare Collaborative (QWQHC) (Hanson, Fahlman & Lemonde, 2007). While accreditation does not have legislative backing, it is a goal for hospital administrators to use measured workplace indicators to force attention to the environment in which nurses provide care.

Encouraging hospital administrators to improve nursing work environments is critical to alleviate widespread dissatisfaction of nurses with their profession and reduce competition from other career opportunities for women (Kimball & O'Neil, 2002). Many Non-Government Organizations (NGO) have been involved in initiatives designed to improve the quality of medical and nursing care. Two leading NGOs, the Robert Wood Johnson Foundation and Institute of Healthcare Improvement collaborated on a project called Transforming Care at Bedside that received funding for pilot studies for medical/surgical nurses to improve care in hospital units (Hassmiller & Cozine, 2006). Similarly, pilot studies which use nurses to identify

and implement changes aimed at improving patient care have been demonstrated to improve the morale of nurses as they have greater control and autonomy in making unit level decisions.

To improve the impact of quality improvement or staff morale initiatives, it is important that policy makers adopt policies which ensure that hospital leadership solicits recommendations from nurses themselves to improve delivery of care. In addition, it is important that protected funding is provided to management to ensure intended outcomes are realized as changes often take longer than a budget year to implement. Furthermore, it is important that policies are in-place to ensure delivery of care using sound measures to document the program outcomes. The factors identified in this study which support SPD of nurses can be used to develop performance metrics for policy makers to assess changes in patient care quality, efficiency and human resources.

Using initiatives developed for industries outside of health care offer opportunities for policy makers to initiate changes in hospital culture. For example, airlines uses a Crew Resource Management system focus on *"threat and error management and early identification with blame free countering of human mistakes"* (Haerkens, Jenkins, & van der Hoeven, 2012). Checklists, which are very common in airline and construction industries, have been incorporated into hospital culture through policy initiatives (Hassmiller & Cozine, 2006; Pucher et al., 2014; Robbins, 2011; Gawande, 2010)).

5.7.3 Education

Similar to other established professions, such as education, accounting and law, nursing students are introduced to professional work environments throughout their studies. In order to familiarize nursing students with hospital work environments, curriculums which expose students to the realities of the work environment are critical. It is important to ensure that the nursing students are motivated to excel so that the training programs will be effective (Quinones, 1995).

Courses in Organizational Culture, Leadership and Conflict Resolution foster an empowering work environment. Exposure and training in various frameworks, tools and methodologies related to improving organizational citizenry traits of nurses are important to ensure that graduate nurses are well adapted for the realities of the ever-changing hospital ward environment. In addition, it is recommended that curriculums include courses related to problem-solving, solution-focused methodologies to address challenges of everyday nursing in course activities,

understanding health care system structure and functioning and assignments and practicum experiences during undergraduate and graduate training of nurses. *"Fear of hospital environments has frequently been mentioned by nursing students as a reason for anxiety with clinical placements"* (Sharif & Masoumi, 2005). Major concerns of nursing students related to their clinical placement are the feeling that they are underprepared for the placement and a perceived knowledge deficit (Levett-Jones, Pitt, Courtney-Pratt, Harbrow, & Rossiter 2015). Therefore it is critical that courses should include enough exposure to real world nursing practice and also cover the support systems such as mentoring in place at the clinical placement sites.

Furthermore an important area for improvement identified in this study is related to the need for educational support throughout nursing careers. Continuing Professional Education (CPE) courses covering recent and new research findings and their practical implications should be included in course offerings through professional associations and educational institutions. For practicing nurses, CPE courses related to new dynamics of ward work environments and factors associated with SPD of nurses are needed. Health care system needs to provide funding and work release for ongoing professional development for nursing staff.

5.8 Future research

There is a need to further understand factors associated with SPD of nurses and to validate these findings by use of multi-site studies related to ward nurses from all areas of care rather than only cardiology and stroke wards. Selection of study participants should follow appropriate random selection techniques of a large number of units. In the current study, a set of theory-supported factors associated with SPD of nurses were analyzed. It is imperative to include studies which investigate linkages between patient outcomes and SPD of nurses. Subsequent research could include other factors such as physical design of the ward and the collective bargaining climate of the province where the hospital is located etc.

Additional studies are needed to elaborate the interactions of various factors associated with SP of nurses. This study seeks to address the paucity of research related to factors which support SPD of nurses. Further research is needed to improve the SPD of nurses without increasing monetary perks; as health care budgets are constrained and collective bargaining agreements for nurses are getting more rigid; thereby reducing discretion of health administrators to selectively reward nurses based on performance. Studies of SPD for other health professionals working in

hospital settings might provide additional evidence to support improvement of outcomes. This study focused on the work environment in hospitals.

5.9 Summary

In conclusion, findings of this dissertation support use of resources to develop better work environments in hospitals for nurses through the use of improved organizational culture and leadership, to reduce stress levels of nurses and improve professional equity which lead to improved SPD. The presence of good leadership, better organizational culture and supporting ward environment not only influence daily distress but contributes to SPD of nurses. The SEM model incorporated more variables than the regression model and provided an indication of directional associations between contextual factors and SPD of nurses. Evidence has been provided to support further examination of the model by use of longitudinal studies to confirm directional causality. This twin city study has provided a comprehensive analysis of work environments which enhance SPD of nurses to be used by health care managers. Evidence provided in this dissertation can be used by health administrators and policy experts to devise improved strategies for creating optimal work environments for nurses working in Canadian hospitals.

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Appendix A: Survey invitation- Cardiology

Code # 1-2-3-4567

Letter describing Managing Quality Study given to Providers of Patient Care

Dear Provider of Care:

The Queen Elizabeth Hospital wants to provide the best care possible to patients. Your views about the care provided to patients and organizational factors which affect quality of care are important so that we can determine what we are doing well and improve areas that we need to do better. We invite you to participate in the study of "Managing Quality in Canadian Hospitals".

If you agree to participate we will ask you to complete a questionnaire about organizational issues which affect the quality of care provided to cardiology patients; such as job stress; fairness; satisfaction with performance of duties; organizational support for your unit and quality improvement activities; and to participate in a focus group on these same issues. The questionnaire takes about 30 minutes and is coded by number only, so your identity is kept confidential. The focus groups are moderated by the Research Coordinator and your remarks at the session are coded by number on the transcript, so that your identity is kept confidential.

Your decision to participate in any or all parts of this study is voluntary. You may decide to complete the questionnaire only and this is fine. Participation in the focus group is also voluntary. You may change your mind and withdraw n from any or all parts of the study up to ____date which is when the data is finalized. Your returning the questionnaire indicates your consent for the researchers to use the data for research on how to improve patient care.

This study is an integral part of Quality Improvement in the Cardiology Division and is being conducted under the direction of Dr. Ata Quraishi, Principal Investigator.

In recognition of your time in completing this questionnaire, we would like you to enjoy your favourite coffee, tea or hot chocolate with a gift card at Tim Horton's or Starbuck's, whichever you prefer.

Appendix B: Survey invitation- Neurology

Code # 1-2-3-4567

Letter describing Managing Quality Study given to Providers of Patient Care

Dear Provider of Care:

The Queen Elizabeth Hospital wants to provide the best care possible to patients. Your views about the care provided to patients and organizational factors which affect quality of care are important so that we can determine what we are doing well and improve areas that we need to do better. We invite you to participate in the study of "Managing Quality in Canadian Hospitals".

If you agree to participate we will ask you to complete a questionnaire about organizational issues which affect the quality of care provided to Neurology patients; such as job stress; fairness; satisfaction with performance of duties; organizational support for your unit and quality improvement activities; and to participate in a focus group on these same issues. The questionnaire takes about 30 minutes and is coded by number only, so your identity is kept confidential. The focus groups are moderated by the Research Coordinator and your remarks at the session are coded by number on the transcript, so that your identity is kept confidential.

Your decision to participate in any or all parts of this study is voluntary. You may decide to complete the questionnaire only and this is fine. Participation in the focus group is also voluntary. You may change your mind and withdraw n from any or all parts of the study up to ____date which is when the data is finalized. Your returning the questionnaire indicates your consent for the researchers to use the data for research on how to improve patient care.

This study is an integral part of Quality Improvement in the Neurology Division and is being conducted under the direction of Dr. Stephen Phillips, Principal Investigator.

In recognition of your time in completing this questionnaire, we would like you to enjoy your favourite coffee, tea or hot chocolate with a gift card at Tim Horton's or Starbuck's, whichever you prefer.

Appendix C: Survey questionnaire- Cardiology

Code # 1-2-3-4567

Managing Quality of Care in Canadian Hospitals

Perspectives of Cardiology Nurses

National Quality & Policy Study

Version 2 Revised Sept 20-2014

Managing the Quality of Care in Canadian Hospitals

The objectives of this survey are to seek your views regarding: the quality of health care services in your clinical unit; your workload and the stresses of practice; your sense of professional equity along with career satisfaction and interruptions to personal life.

1. Quality Issues – based on the unit you most often provide patient care, rate the following aspects of quality.

How often does the unit engage in the following quality related activities?

Quality Activity	Not at all	Annually	A few times a year	Monthly	Weekly
Patient Care Huddles/Conferences	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Incident/Adverse Event Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Accreditation Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Clinical Quality Indicator Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Review of Patient Outcomes	[ ]	[ ]	[ ]	[ ]	[ ]

How would you characterize the organization of care on the unit?

Organizational Aspect	Not at all	Rarely	For some patients	For most patients	For ALL patients
Classifying patients by severity or amount of care	[ ]	[ ]	[ ]	[ ]	[ ]
Categorization of patients by INTENSITY of care	[ ]	[ ]	[ ]	[ ]	[ ]
Care of patients by teams of MDs, NPs and RNs	[ ]	[ ]	[ ]	[ ]	[ ]
Teams are multidisciplinary	[ ]	[ ]	[ ]	[ ]	[ ]
There is a designated team leader	[ ]	[ ]	[ ]	[ ]	[ ]
Physician(s) are INTEGRATED members of care teams	[ ]	[ ]	[ ]	[ ]	[ ]

Consider the state of staffing, equipment and facilities in the hospital unit where you most often provide care to patients, *using the standards listed:*

0 = non-functional;
10 to 40 terrible to poor;
50 or 60 passable or adequate;
70 to 90 good to excellent;
100 = perfect.

Please assess the following:

Categories of Resources:	Circle the appropriate response for each category											
Capabilities of medical staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of nursing staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of therapy staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of technical support staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Functioning of equipment:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Suitability of physical facilities:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Organization of responsibilities	*Don't know*	0	10	20	30	40	50	60	70	80	90	100

Having considered the state of resources and organization of your unit, please indicate your assessment of the OVERALL QUALITY of care provided to patients on this unit, *using the following standards*
(0 =non-functional; 10 to 40=terrible to poor; 50-60=passable or adequate; 70-90 =good to excellent; 100= perfect):

Don't know	0	10	20	30	40	50	60	70	80	90	100

2. Organization of Responsibilities

On what unit do you most often provide patient care?

Do you work in other patient care units? (please specify briefly)

Are your position(s) on these units Permanent or Casual?

	Main	2nd	3rd
Permanent			
Casual			
Temp, relief or contract			
Other			

Including all your positions, do you work:

- ☐ More than full-time
- ☐ Full-time
- ☐ About ¾ time
- ☐ About ½ time
- ☐ About ¼ time
- ☐ Less than ¼ time

What type of shifts do you work for the positions you have? 8 hr ☐ 12 hr ☐ Both 8 & 12 hour shifts ☐

How many hours **OVERTIME** do you work in an average WEEK?

None	1-2 per week	3-4 per week	5-6 per week	7-8 per week	*9-12 per week*	*13-17per week*	*18+ per week*
☐	☐	☐	☐	☐	☐	☐	☐

Profile of Duties

Please indicate the approximate percentage of time you now spend on these activities.	Direct Patient Care / Patient Teaching	%
	Mentoring/Teaching students	%
	Co-ordinating Care Duties	%
	Participation in Research	%
	Administrative Duties	%
		100 %

Model of Nursing Care

For about how many patients do you carry out these duties per shift:	None	1 – 2 patients	3 – 4 patients	5 – 8 patients	9-12 patients	13 + patients
Develop patient care plans						
Monitor vital signs						
Administer routine medications						
Administer Psychotropic Drugs						
Initiate and set up IVs						
Maintain IVs						
Wound care or change dressings						
Remove sutures or drains						
Assist with hygiene or mobility						
Team leading						
Coordinate tests & treatments						
Evaluate progress of patients						
Documentation in patients' charts						

3. Daily Distress- providers of care experience physical and emotional stress in doing their work

How frequently do you:	Never	A few times a year	Once a month	2 - 3 times a month	Once a week	2 - 3 times a week	Every day
feel frustrated accessing facilities/services for patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
suffer from fatigue due to working late and/or nights?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
carry out tasks that you think are NOT your responsibility?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
observe poor organization of tests and/or treatments in the care of patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have workdays with unexpected disruptions during your clinical care duties?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
experience conflict between responsibilities at work and at home?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel irritable or anxious at home thinking about issues at work	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Have to cover for staff who have called in sick	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that your work has desensitized your feelings/ emotions?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel sad because of the death or serious illness of a patient?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel really good because a patient had resolved a serious health issue.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel excited about the work that you do.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
experience frustration dealing with demanding patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

have to carry out complex tasks with insufficient consultation with other professionals?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have to carry out specialized tasks with inadequate staff and/or technical support?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
observe significant compromises in care provided to patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that you can concentrate on the tasks that should be done?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that you are in control of your day-to-day working activities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have workdays that are so busy that you are physically exhausted at the end of the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have such demanding workdays that you are emotionally drained at the end of the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel confident that you have been able to do your work at a high standard of care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How would you rate your level of stress?	Very Low ❑	Low ❑	Moderate ❑	High ❑	Very high ❑
How would you rate your level of health?	Very poor ❑	Poor ❑	Fair ❑	Good ❑	Very Good ❑

4. Coping with stress - providers of care need to look after their own emotional and physical health

How frequently do you:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
get a restful night's sleep?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
skip proper meals?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in physical exercise?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
smoke cigarettes?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
consume alcohol?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use drugs (prescribed or others) to relieve stress?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
worry about issues at work while at home?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in activities at home or in the community that take your mind off work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
spend time with friend(s) away from work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
cancel a personal or social activity in order to meet work commitments?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use a sick day off to recover from work stress	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use a sick day to handle personal/family issues	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
get emotional support from family members, relatives or close friends?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have issues at home that make it difficult to relieve the stress of work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in spiritual or meditation activities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
In handling issues at work how often do you:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
review tasks to be done for the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
discuss issues and problems with staff?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
express impatience when people do not respond to requests as quickly as they should?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
express anger when people at work make mistakes?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
maintain a positive attitude throughout the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
report errors made in the care of patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
spend time keeping up or advancing your clinical knowledge or skills?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
eat a nutritious meal during the workday?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Indicate how often you experience:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
collegial support in the form of sound or useful advice when you need to talk about a problem.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
encouragement and caring from colleagues during hectic periods of the workday.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
viewing difficult tasks as opportunities to learn and develop skills.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

cooperation from colleagues helping to get things done during busy periods at work.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
help from a colleague who fills in for you when you needed time off for a special need	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How would you rate your ability to cope with stress?	Very Low	Low	Moderate	High	Very high
	[ ]	[ ]	[ ]	[ ]	[ ]

5. PROFESSIONAL EQUITY

Professional equity is defined as the balance between the contributions of nurses and the rewards they receive. Your responses to the following statements will allow you to assess the contributions you make, the rewards you receive, and whether equity has been achieved or not achieved.

Regarding <u>fulfillment</u>, consider the following aspects of your nursing career	Very Low	Low	Somewhat Low	Somewhat High	High	Very High
Your sense of gratification derived from providing care to patients is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your sense of contributing to society in your various roles as a nurse is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The opportunities to use your most advanced clinical skills are:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The choices you have over the activities you carry out or participate in are:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your sense of accomplishment from your work as a nurse is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How well does your <u>income</u> reflect:	Not at all	Slightly	Partially	Moderately	Mostly	Perfectly
the time you spend on your duties?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your qualifications and training?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your responsibilities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
the stresses of making risky decisions?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your years of experience?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Regarding <u>recognition</u>, please consider the following sources.	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Your contributions to the health of the people of your region are appreciated.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your colleagues acknowledge the efforts you make in carrying out your responsibilities.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Physicians you work with show respect for you as a nurse.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators understand the stresses you experience as a nurse.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

You have meaningful influence over decisions affecting your practice environment.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Patients express appreciation for the care you provide to them.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
You believe patients will follow advice about lifestyle changes and following doctor's order	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your dedication as a nurse has led to advances in your career.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Overall, the full range of rewards you receive for all the contributions you make are:

Very Unfavourable	Unfavourable	Somewhat Unfavourable	Fair	Somewhat Favourable	Favourable	Very Favourable
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

6. Career satisfaction is fundamental in maintaining the morale of providers

How satisfied are you with:	Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied
your interactions and relationships with other nurses?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your nurse-patient relationships derived from providing patient care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
the diversity of patients you see (age, types of clinical conditions, etc.)?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your success in meeting the needs of your patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to access resources needed to provide care for your patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your capacity to keep up with advances in your nursing specialty?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your role in organizing treatment programs for patients in your community?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your interactions and relationships with physicians?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your interactions and relationships with health care administrators?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your opportunities to make suggestions for improving patient care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your authority to get clinical decisions within your scope of practice carried out?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to control your work schedule?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to keep responsibilities at work from intruding on your personal life?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

your earnings as a nurse during your career?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to maintain satisfying activities in the community (service, culture, church,	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your career advancement in nursing?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
the way administrative issues on your nursing unit are handled?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your sense of working in a patient care unit dedicated to delivering best possible care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Overall satisfaction from your nursing career, considering your various roles and responsibilities?	Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

7. Valuing Team Care

A team approach in the care of the patients involves physicians, nurse practitioners and registered nurses with contributions by other health professionals such as therapists, pharmacists, and technologists.

Please indicate your level of agreement with the following:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Team-based care effectively addresses social support issues (family & friends) of patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Working in teams unnecessarily complicates delivery of care to patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care is an effective way of responding to patients needs when complications arise	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care helps to avoid errors in providing care to patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care allows individuals to evade accountability for quality of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care motivates team members to perform their duties at a high standard	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Working in teams is more satisfying than working in other models of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team-based care provides higher quality of care than other models of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How extensively are team models of care used on your unit?	Not at all ❑	For a few patients ❑	For some patients ❑	For most patients ❑	For all patients ❑

8. Effectiveness of Team Care on your unit

Please indicate your level of agreement with the following:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I am able to discuss and share ideas within a team	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am comfortable accepting responsibilities delegated or assigned to me within a team	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Patient care plans are not adequately discussed among team members	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Important information is shared among team members	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am able to speak out within the team IF others are not keeping the best interests of the patient in mind	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Disagreements within the team often remain unresolved	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team members in my unit work together to organize patient care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

9. Organizational Support on your unit

Organizational support of unit staff is important in meeting challenges of work.

Please indicate your opinion on the following aspects of support.	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The work of the unit is organized such that you can do your job effectively	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are able to attend professional development sessions and workshops	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff in your unit are able to exercise initiative in improving methods	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are encouraged to develop your skills and knowledge	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Resources are available for finding and using best practices	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are able to achieve group consensus when dealing with major issues	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
In the work of the unit, you are encouraged to contribute your ideas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

10. Leadership in the Hospital

The policies and examples set by senior administrators greatly affect the work of health care providers.

Please indicate your opinion on the following aspects of administration.	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Administration values my contributions to the hospital	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators set good examples by their own behaviour in response to ethical dilemmas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators set good examples by their decisions in response to financial constraints	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration gives me opportunities to express my views	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration is honest in their dealings with me	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration treats everyone in a fair and consistent manner	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration has fair procedures to select ideas or proposals that are implemented	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration commits resources to mentoring activities	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The organization communicates effectively regarding planned changes that will affect me	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The organization provides me with training in order for me to adjust to planned changes	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am proud to tell people I provide patient care in this hospital	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

11. Organizational Culture of the Health Region

The culture of an organization affects the way people approach their work and their attitudes.

Please indicate your view of the following aspects of culture in your organization	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient care is not well organized in the health region	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Units in the health region work cooperatively to solve problems or handle complex cases	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is committed to using objective standards for improving care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region does not reward people who work at a high standard of performance	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region rewards people or units contributing innovative ideas that work	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

The health region does not learn from the experiences of other organizations	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
People in the health region tend to evade or shift responsibility when problems occur	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Sick time is over-used by health providers in the health region	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
There are few opportunities for advancement in the health region.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
People in the health region are reluctant to report incidents when they occur.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is not committed to using best practices.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
People in the health region face so many competing demands that they just try to get through the day	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is committed to participation in research.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

12. Interruptions with personal life

Patient care responsibilities are carried out on a round the clock basis including holidays, evenings and nights.

How often does your nursing career interfere with the following issues?	*Not applicable*	Never	A few times a year	Once a month	2 –3 times a month	Once a week	2 – 3 times a week	Every day
Participating in recreational or community interests?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Looking after preschool children?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Getting children ready for school in the morning?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Picking up children from school, or being at home when they come home from school?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Taking care of household duties?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Being at home with family members?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Spending time with friends?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Looking after a dependent relative or parent?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

13. Demographics

Education

Nursing Qualification/Certification

RN ☐
LPN ☐
Other ☐ Please indicate below

Specialty areas within your practice

1)
2)
3)
4)

What is your age? ☐

How many years have you been in practice? ☐ **Female** ☐ **Male** ☐

Marital Status

☐ Single
☐ Married/Common Law
☐ Separated/Divorced
☐ Widowed
☐ Other

how many days a week does your partner work?

☐ Less than 1 day per week
☐ 1 or 2 days per week
☐ 3 or 4 days per week
☐ Full-time

What issues should be covered in follow-up surveys?

Thank you for taking the time and effort to complete this survey. The results will be analyzed and reported in broad groups. Your identity will be held in strictest confidence.

National Quality & Policy Study

Version 2 Revised Sept 20-2014

Appendix D: Survey questionnaire- Neurology

Code # 1-2-3-4567

Managing Quality of Care in Canadian Hospitals

Perspectives of Neurology Nurses

National Quality & Policy Study

Version 2, Sept 20, 2014

Managing the Quality of Care in Canadian Hospitals

The objectives of this survey are to seek your views regarding: the quality of health care services in your clinical unit; your workload and the stresses of practice; your sense of professional equity along with career satisfaction and interruptions to personal life.

2. Quality Issues – based on the unit you most often provide patient care, rate the following aspects of quality.

How often does the unit engage in the following quality related activities?

Quality Activity	Not at all	Annually	A few times a year	Monthly	Weekly
Patient Care Huddles/Conferences	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Incident/Adverse Event Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Accreditation Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Reviews of Clinical Quality Indicator Reports	[ ]	[ ]	[ ]	[ ]	[ ]
Review of Patient Outcomes	[ ]	[ ]	[ ]	[ ]	[ ]

How would you characterize the organization of care on the unit?

Organizational Aspect	Not at all	Rarely	For some patients	For most patients	For ALL patients
Classifying patients by severity or amount of care	[ ]	[ ]	[ ]	[ ]	[ ]
Categorization of patients by INTENSITY of care	[ ]	[ ]	[ ]	[ ]	[ ]
Care of patients by teams of health professionals	[ ]	[ ]	[ ]	[ ]	[ ]
Teams are multidisciplinary	[ ]	[ ]	[ ]	[ ]	[ ]
There is a designated team leader	[ ]	[ ]	[ ]	[ ]	[ ]
Physician(s) are INTEGRATED members of care teams	[ ]	[ ]	[ ]	[ ]	[ ]

Consider the state of staffing, equipment and facilities in the hospital unit where you most often provide care to patients, *using the standards listed:*

0 = non-functional;
10 to 40 terrible to poor;
50 or 60 passable or adequate;
70 to 90 good to excellent;
100 = perfect.

Please assess the following:

Categories of Resources:	Circle the appropriate response for each category											
Capabilities of medical staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of nursing staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of therapy staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Capabilities of technical support staff:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Functioning of equipment:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Suitability of physical facilities:	*Don't know*	0	10	20	30	40	50	60	70	80	90	100
Organization of responsibilities	*Don't know*	0	10	20	30	40	50	60	70	80	90	100

Having considered the state of resources and organization of your unit, please indicate your assessment of the OVERALL QUALITY of care provided to patients on this unit, *using the following standards*
(0 =non-functional; 10 to 40=terrible to poor; 50-60=passable or adequate; 70-90 =good to excellent; 100= perfect):

Don't know	0	10	20	30	40	50	60	70	80	90	100

2. Organization of Responsibilities

On what unit do you most often provide patient care?

Do you work in other patient care units? (please specify briefly)

Are your position(s) on these units Permanent or Casual?

	Main	2nd	3rd
Permanent			
Casual			
Temp, relief or contract			
Other			

Including all your positions, do you work:

- ☐ More than full-time
- ☐ Full-time
- ☐ About ¾ time
- ☐ About ½ time
- ☐ About ¼ time
- ☐ Less than ¼ time

What type of shifts do you work for the positions you have? 8 hr ☐ 12 hr ☐ Both 8 & 12 hour shifts ☐

How many hours **OVERTIME** do you work in an average WEEK?

None	1-2 per week	3-4 per week	5-6 per week	7-8 per week	*9-12 per week*	*13-17per week*	*18+ per week*
☐	☐	☐	☐	☐	☐	☐	☐

Profile of Duties

Please indicate the approximate percentage of time you now spend on these activities.		
	Direct Patient Care / Patient Teaching	%
	Mentoring/Teaching students	%
	Co-ordinating Care Duties	%
	Participation in Research	%
	Administrative Duties	%
		100 %

Model of Nursing Care

For about how many patients do you carry out these duties per shift:	None	1 – 2 patients	3 – 4 patients	5 – 8 patients	9-12 patients	13 + patients
Develop patient care plans						
Monitor vital signs						
Administer routine medications						
Administer Psychotropic Drugs						
Initiate and set up IVs						
Maintain IVs						
Wound care or change dressings						
Remove sutures or drains						
Assist with hygiene or mobility						
Team leading						
Coordinate tests & treatments						
Evaluate progress of patients						
Documentation in patients' charts						

3. Daily Distress- providers of care experience physical and emotional stress in doing their work

How frequently do you:	Never	A few times a year	Once a month	2 - 3 times a month	Once a week	2 - 3 times a week	Every day
feel frustrated accessing facilities/services for patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
suffer from fatigue due to working late and/or nights?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
carry out tasks that you think are NOT your responsibility?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
observe poor organization of tests and/or treatments in the care of patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have workdays with unexpected disruptions during your clinical care duties?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
experience conflict between responsibilities at work and at home?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel irritable or anxious at home thinking about issues at work	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Have to cover for staff who have called in sick	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that your work has desensitized your feelings/ emotions?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel sad because of the death or serious illness of a patient?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel really good because a patient had resolved a serious health issue.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel excited about the work that you do.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
experience frustration dealing with demanding patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

have to carry out complex tasks with insufficient consultation with other professionals?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have to carry out specialized tasks with inadequate staff and/or technical support?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
observe significant compromises in care provided to patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that you can concentrate on the tasks that should be done?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel that you are in control of your day-to-day working activities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have workdays that are so busy that you are physically exhausted at the end of the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have such demanding workdays that you are emotionally drained at the end of the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
feel confident that you have been able to do your work at a high standard of care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How would you rate your level of stress?	Very Low ❑	Low ❑	Moderate ❑	High ❑	Very high ❑
How would you rate your level of health?	Very poor ❑	Poor ❑	Fair ❑	Good ❑	Very Good ❑

4. Coping with stress - providers of care need to look after their own emotional and physical health

How frequently do you:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
get a restful night's sleep?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
skip proper meals?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in physical exercise?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
smoke cigarettes?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
consume alcohol?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use drugs (prescribed or others) to relieve stress?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
worry about issues at work while at home?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in activities at home or in the community that take your mind off work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
spend time with friend(s) away from work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
cancel a personal or social activity in order to meet work commitments?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use a sick day off to recover from work stress	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
use a sick day to handle personal/family issues	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
get emotional support from family members, relatives or close friends?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
have issues at home that make it difficult to relieve the stress of work?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
engage in spiritual or meditation activities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

In handling issues at work how often do you:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
review tasks to be done for the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
discuss issues and problems with staff?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
express impatience when people do not respond to requests as quickly as they should?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
express anger when people at work make mistakes?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
maintain a positive attitude throughout the day?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
report errors made in the care of patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
spend time keeping up or advancing your clinical knowledge or skills?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
eat a nutritious meal during the workday?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Indicate how often you experience:	Not applicable	Never	A few times a year	Once a month	2-3 times a month	Once a week	2-3 times a week	Every day
collegial support in the form of sound or useful advice when you need to talk about a problem.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
encouragement and caring from colleagues during hectic periods of the workday.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
viewing difficult tasks as opportunities to learn and develop skills.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
cooperation from colleagues helping to get things done during busy periods at work.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
help from a colleague who fills in for you when you needed time off for a special need	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How would you rate your ability to cope with stress?	Very Low	Low	Moderate	High	Very high
	[ ]	[ ]	[ ]	[ ]	[ ]

5. PROFESSIONAL EQUITY

Professional equity is defined as the balance between the contributions of nurses and the rewards they receive. Your responses to the following statements will allow you to assess the contributions you make, the rewards you receive, and whether equity has been achieved or not achieved.

Regarding fulfillment, consider the following aspects of your nursing career	Very Low	Low	Somewhat Low	Somewhat High	High	Very High
Your sense of gratification derived from providing care to patients is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your sense of contributing to society in your various roles as a nurse is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The opportunities to use your most advanced clinical skills are:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The choices you have over the activities you carry out or participate in are:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your sense of accomplishment from your work as a nurse is:	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How well does your income reflect:	Not at all	Slightly	Partially	Moderately	Mostly	Perfectly
the time you spend on your duties?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your qualifications and training?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your responsibilities?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
the stresses of making risky decisions?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your years of experience?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Regarding recognition, please consider the following sources.	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Your contributions to the health of the people of your region are appreciated.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Your colleagues acknowledge the efforts you make in carrying out your responsibilities.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Physicians you work with show respect for you as a nurse.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators understand the stresses you experience as a nurse.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
You have meaningful influence over decisions affecting your practice environment.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Patients express appreciation for the care you provide to them.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
You believe patients will follow advice about lifestyle changes and following doctor's orders	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Your dedication as a nurse has led to advances in your career.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Overall, the full range of rewards you receive for all the contributions you make are:

Very Unfavourable	Unfavourable	Somewhat Unfavourable	Fair	Somewhat Favourable	Favourable	Very Favourable
[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

6. Career satisfaction is fundamental in maintaining the morale of providers

How satisfied are you with:	Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied
your interactions and relationships with other nurses?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your nurse-patient relationships derived from providing patient care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
the diversity of patients you see (age, types of clinical conditions, etc.)?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your success in meeting the needs of your patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to access resources needed to provide care for your patients?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your capacity to keep up with advances in your nursing specialty?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your role in organizing treatment programs for patients in your community?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your interactions and relationships with physicians?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your interactions and relationships with health care administrators?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your opportunities to make suggestions for improving patient care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your authority to get clinical decisions within your scope of practice carried out?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to control your work schedule?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to keep responsibilities at work from intruding on your personal life?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your earnings as a nurse during your career?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your ability to maintain satisfying activities in the community (service, culture, church,	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your career advancement in nursing?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

the way administrative issues on your nursing unit are handled?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
your sense of working in a patient care unit dedicated to delivering best possible care?	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

Overall satisfaction from your nursing career, considering your various roles and responsibilities?	Very Dissatisfied	Dissatisfied	Somewhat Dissatisfied	Somewhat Satisfied	Satisfied	Very Satisfied
	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

7. Valuing Team Care

A team approach in the care of the patients involves physicians, nurse practitioners, registered nurses, and therapists with contributions by dieticians, licensed practical nurses, pharmacists and others.

Please indicate your level of agreement with the following:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Team-based care effectively addresses social support issues (family & friends) of patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Working in teams unnecessarily complicates delivery of care to patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care is an effective way of responding to patients needs when complications arise	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care helps to avoid errors in providing care to patients	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care allows individuals to evade accountability for quality of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team care motivates team members to perform their duties at a high standard	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Working in teams is more satisfying than working in other models of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team-based care provides higher quality of care than other models of care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

How extensively are team models of care used on your unit?	Not at all ❑	For a few patients ❑	For some patients ❑	For most patients ❑	For all patients ❑

8. Effectiveness of Team Care on your unit

Please indicate your level of agreement with the following:	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
I am able to discuss and share ideas within a team	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am comfortable accepting responsibilities delegated or assigned to me within a team	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Patient care plans are not adequately discussed among team members	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Important information is shared among team members	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am able to speak out within the team IF others are not keeping the best interests of the patient in mind	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Disagreements within the team often remain unresolved	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Team members in my unit work together to organize patient care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

9. Organizational Support on your unit

Organizational support of unit staff is important in meeting challenges of work.

Please indicate your opinion on the following aspects of support.	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
The work of the unit is organized such that you can do your job effectively	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are able to attend professional development sessions and workshops	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff in your unit are able to exercise initiative in improving methods	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are encouraged to develop your skills and knowledge	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Resources are available for finding and using best practices	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Staff are able to achieve group consensus when dealing with major issues	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
In the work of the unit, you are encouraged to contribute your ideas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

10. Leadership in the Hospital

The policies and examples set by senior administrators greatly affect the work of health care providers.

Please indicate your opinion on the following aspects of administration.	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Administration values my contributions to the hospital	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators set good examples by their own behaviour in response to ethical dilemmas	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administrators set good examples by their decisions in response to financial constraints	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration gives me opportunities to express my views	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration is honest in their dealings with me	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration treats everyone in a fair and consistent manner	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration has fair procedures to select ideas or proposals that are implemented	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Administration commits resources to mentoring activities	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The organization communicates effectively regarding planned changes that will affect me	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The organization provides me with training in order for me to adjust to planned changes	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
I am proud to tell people I provide patient care in this hospital	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

11. Organizational Culture of the Health Region

The culture of an organization affects the way people approach their work and their attitudes.

Please indicate your view of the following aspects of culture in your organization	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient care is not well organized in the health region	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Units in the health region work cooperatively to solve problems or handle complex cases	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is committed to using objective standards for improving care	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region does not reward people who work at a high standard of performance	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region rewards people or units contributing innovative ideas that work	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region does not learn from the experiences of other organizations	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

People in the health region tend to evade or shift responsibility when problems occur	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Sick time is over-used by health providers in the health region	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
There are few opportunities for advancement in the health region.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
People in the health region are reluctant to report incidents when they occur.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is not committed to using best practices.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
People in the health region face so many competing demands that they just try to get through the day	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The health region is committed to participation in research.	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

13. Interruptions with personal life

Patient care responsibilities are carried out on a round the clock basis including holidays, evenings and nights.

How often does your nursing career interfere with the following issues?	*Not applicable*	Never	A few times a year	Once a month	2 –3 times a month	Once a week	2 – 3 times a week	Every day
Participating in recreational or community interests?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Looking after preschool children?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Getting children ready for school in the morning?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Picking up children from school, or being at home when they come home from school?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Taking care of household duties?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Being at home with family members?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Spending time with friends?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
Looking after a dependent relative or parent?	*[ ]*	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

13. Demographics

Education

Specialty areas within your practice

1)
2)
3)
4)

Nursing Qualification/Certification

RN
LPN
Other Please indicate below

What is your age?

How many years have you been in practice? **Female** **Male**

Marital Status

- Single
- Married/Common Law
- Separated/Divorced
- Widowed
- Other

how many days a week does your partner work?

- Less than 1 day per week
- 1 or 2 days per week
- 3 or 4 days per week
- Full-time

What issues should be covered in follow-up surveys?

Thank you for taking the time and effort to complete this survey. The results will be analyzed and reported in broad groups. Your identity will be held in strictest confidence.

National Quality & Policy Study

Version 2, Sept 20, 2014

Appendix E

Table E-1. Inter-Item Correlation Matrix – Administrative.

Inter-Item Correlation Matrix - Administrative

	interactions & relationships with admin	opportunities to suggest improvs for care	authority to get clinical decisions carried out	admin aspects of professional practice	working in a unit dedicated to best care
SAT-role in organizing treatment programs	0.442	0.448	0.354	0.394	0.309
SAT-interactions & relationships with administrators		0.699	0.346	0.641	0.416
SAT-opportunities to suggest improvements for care			0.493	0.529	0.538
SAT-authority to get clinical decisions carried out				0.269	0.547
SAT-administrative aspects of professional practice					0.404

Table E-2. Item Total Statistics – Administrative.

Item-Total Statistics

Sub-Scale Satisfaction with Performance of Administrative Duties 6 items(Cronbach's alpha = 0.834)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SAT-role in organizing treatment programs	0.509	0.827
SAT-interactions & relationships with administrators	0.705	0.787
SAT-opportunities to suggest improvements for care	0.747	0.778
SAT-authority to get clinical decisions carried out	0.514	0.826
SAT-administrative aspects of professional practice	0.606	0.810
SAT-working in a unit dedicated to best care	0.579	0.814

Table E-3. Inter-Item Correlation Matrix – Clinical.

Inter-item Correlation Matrix - Clinical

	diversity of patients	meet needs of patients	ability to access resources	capacity to keep up with advances	authority clinical decisions	unit dedicated to best care
SAT-relationships with patients from providing care	0.373	0.491	0.319	0.343	0.276	0.395
SAT-the diversity of patients you see		0.197	0.200	0.218	0.316	0.226
SAT-ability to meet needs of your patients			0.533	0.374	0.366	0.448
SAT-ability to access resources needed for patients				0.455	0.316	0.377
SAT-capacity to keep up with advances in specialty					0.406	0.348
SAT-authority to get clinical decisions carried out						0.547

Table E-4. Item –Total Statistics- Clinical.

Item-Total Statistics		
Sub-Scale Satisfaction with Performance of Clinical Duties 7 items(Cronbach's alpha = 0.761)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
SAT-Interactions & relationships with other nurses(peers)	0.397	0.744
SAT-relationships with patients from providing care	0.571	0.710
SAT-the diversity of patients you see	0.405	0.744
SAT-ability to meet needs of your patients	0.535	0.716
SAT-ability to access resources needed for patients	0.499	0.724
SAT-capacity to keep up with advances in specialty	0.508	0.721
SAT-Interactions & relationships with physicians	0.433	0.740

Table E-5. Inter-Item Correlation Matrix – Behaviour.

Inter-Item Correlation Matrix - Behaviour

	OC-SHR rewards people or units contributing innovations	OC-Patient Care not well organized in the health region	OC-The region-district does NOT learn from experiences of other orgs	OC-People in the region-district evade responsibility when problems	OC-People in the region-district face demands so get thru the day
OC-Units in the SHR cooperate to solve problems	0.394	0.292	0.239	0.232	0.352
OC-SHR rewards people or units contributing innovations		0.197	0.264	0.231	0.326
OC-Patient Care not well organized in the health region			0.291	0.362	0.330
OC-The region-district does NOT learn from experiences of other orgs				0.502	0.368
OC-People in the region-district evade responsibility when problems					0.536

Table E-6. Item-Total Statistics – Behaviour.

Item-Total Statistics		
Sub-Scale Behavioural Culture 6 items(Cronbach's alpha = 0.754)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OC-SHR rewards people or units contributing innovations	0.372	0.748
OC-Patient Care not well organized in the health region	0.403	0.740
OC-The region-district does NOT reward people working at high std	0.484	0.717
OC-The region-district does NOT learn from experiences of other orgs	0.523	0.706
OC-People in the region-district evade responsibility when problems	0.602	0.686
OC-People in the region-district face demands so get thru the day	0.576	0.692

Table E-7. Inter –Item Corrlelation Matrix – Objectivity.

Inter-Item Correlation Matrix - Objectivity			
	OC-SHR is committed to participating in research	OC-The region-district does NOT reward people working at high std	OC-The region-district is NOT committed to using best practices
OC-SHR is committed to objective stds to improve care	0.447	0.072	0.408
OC-SHR is committed to participating in research		0.079	0.343
OC-The region-district does NOT reward people working at high std			0.137

Table E-8. Item-Total Statistics – Objectivity.

Item-Total Statistics		
Sub-Scale Objective Culture 4 items(Cronbach's alpha = 0.712)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OC-Units in the SHR cooperate to solve problems	0.470	0.664
OC-SHR is committed to objective stds to improve care	0.619	0.572
OC-SHR is committed to participating in research	0.470	0.662
OC-The region-district is NOT committed to using best practices	0.436	0.683

Table E-9. Inter-Item Correlation Statistics – Fulfillment.

Inter-Item Correlation Matrix - Fulfillment				
	PE-contributing to society as a health professional	PE_opportunities to use your advanced skills	PE-choices you have over activities carried out	PE-sense of accomplishment as a professional
PE-sense of gratification from providing care	0.657	0.536	0.578	0.751
PE-contributing to society as a health professional		0.531	0.504	0.644
PE_opportunities to use your advanced skills			0.611	0.610
PE-choices you have over activities carried out				0.686

Table E-10. Item-Total Statistics – Fulfillment.

Item-Total Statistics		
Sub-Scale Fulfillment Equity 5 items(Cronbach's alpha = 0.887)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PE-sense of gratification from providing care	0.754	0.855
PE-contributing to society as a health professional	0.686	0.871
PE_opportunities to use your advanced skills	0.671	0.874
PE-choices you have over activities carried out	0.702	0.867
PE-sense of accomplishment as a professional	0.816	0.840

Table E-11. Inter-Item Correlation Statistics – Pay Equity.

Inter-Item Correlation Matrix - Pay Equity

	PE-qualifications and training	PE-your responsibilities	PE-stresses of making risky decisions	PE-your years of experience
PE-Time Spent on Duties	0.775	0.734	0.576	0.581
PE-qualifications and training		0.727	0.603	0.633
PE-your responsibilities			0.711	0.639
PE-stresses of making risky decisions				0.646

Table E-12. Item-Total Statistics – Pay Equity.

Item-Total Statistics

Sub-Scale Pay Equity 5 items (Cronbach's alpha = 0.908)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PE-Time Spent on Duties	0.769	0.884
PE-qualifications and training	0.795	0.879
PE-your responsibilities	0.822	0.873
PE-stresses of making risky decisions	0.729	0.892
PE-your years of experience	0.715	0.898

Table E-13. Inter-Item Correlation Statistics – Recognition.

Inter-Item Correlation Matrix - Recognition

	PE-colleagues acknowledge your efforts	PE-nurses show professional respect	PE-Administrators understand stresses faced	PE-you have meaningful influence on unit environment	PE-patients express appreciation for your care	PE-believe patients follow lifestyle and therapy advice	PE-your dedication has led to career advancement
PE-Contributions to health of people in region appreciated	0.383	0.265	0.515	0.495	0.350	0.313	0.402
PE-colleagues acknowledge your efforts		0.325	0.290	0.257	0.301	0.233	0.207
PE-nurses show professional respect			0.217	0.301	0.180	0.170	0.271
PE-Administrators understand stresses faced				0.671	0.151	0.351	0.307
PE-you have meaningful influence on unit environment					0.213	0.305	0.398
PE-patients express appreciation for your care						0.332	0.194
PE-believe patients follow lifestyle and therapy advice							0.275

Table E-14. Item-Total Statistics – Recognition.

Item-Total Statistics		
Sub-Scale Recognition Equity 6 items (Cronbach's alpha = 0.782)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PE-Contributions to health of people in region appreciated	0.633	0.736
PE-colleagues acknowledge your efforts	0.435	0.771
PE-nurses show professional respect	0.373	0.780
PE-Administrators understand stresses faced	0.589	0.744
PE-you have meaningful influence on unit environment	0.635	0.735
PE-patients express appreciation for your care	0.359	0.780
PE-believe patients follow lifestyle and therapy advice	0.436	0.770
PE-your dedication has led to career advancement	0.463	0.767

Table E-15. Item-Total Statistics – Unit Organization.

Item-Total Statistics		
Sub-Scale Unit Organization 4 items(Cronbach's alpha = 0.796)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OS-work of unit effectively organized	0.584	0.756
OS-staff in unit can exercise initiative to improve care	0.648	0.723
OS-staff able to achieve group consensus on issues	0.567	0.764
OS-in the work of the unit you can contribute ideas	0.632	0.733

Table E-16. Item-Total Statistics – Unit Development.

Item-Total Statistics		
Sub-Scale Unit Development 3 items(Cronbach's alpha = 0.811)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OS-staff can attend workshops & development sessions	0.596	0.802
OS-staff encouragedd to develop skills & knowledge	0.696	0.702
OS-resources are available to find & use best practice	0.683	0.703

Table E-17. Inter-Item Correlation Statistics – Unit Development.

Inter-Item Correlation Matrix - Unit Development		
	OS-staff encouragedd to develop skills & knowledge	OS-resources are available to find & use best practice
OS-staff can attend workshops & development sessions	0.551	0.541
OS-staff encouragedd to develop skills & knowledge		0.675

Table E-18. Inter-Item Correlation Statistics – Unit Organization.

Inter-Item Correlation Matrix - Unit Organization			
	OS-staff in unit can exercise initiative to improve care	OS-staff able to achieve group consensus on issues	OS-in the work of the unit you can contribute ideas
OS-work of unit effectively organized	0.542	0.432	0.455
OS-staff in unit can exercise initiative to improve care		0.458	0.559
OS-staff able to achieve group consensus on issues			0.517

Table E-19. Item-Total Statistics – Leader Values.

Item-Total Statistics		
Sub-Scale Leader Values 3 items(Cronbach's alpha = 0.862)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
L-value my contributions to our health region	0.695	0.850
L-allow me to express views to leadership	0.801	0.749
L-process used by leaders to implement ideas is fair	0.727	0.820

Table E-20. Item-Total Statistics – Leader Integrity.

Item-Total Statistics		
Sub-Scale Leader Integrity 4 items(Cronbach's alpha = 0.847)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
L-set good examples responding to ethical dilemmas	0.708	0.798
L-are honest in their dealings with me	0.735	0.785
L-everyone is treated in a fair & consistent manner	0.758	0.774
L-I am proud to tell people I provide patient care here	0.550	0.861

Table E-21. Item-Total Statistics – Leader Integrity.

Item-Total Statistics		
Sub-Scale Leader Integrity 4 items(Cronbach's alpha = 0.899)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
L-make good decisions responding to financial limits	0.703	0.896
L-provide sufficient resources for mentoring actions	0.755	0.877
L-communicate effectively about changes affecting me	0.832	0.848
L-provides training need to deal with planned changes	0.816	0.856

Table E-22. Inter-Item Correlation Statistics – Leadership Values.

Inter-Item Correlation Matrix - Leadership Values

	L-allow me to express views to leadership	L-process used by leaders to implement ideas is fair
L-value my contributions to our health region	0.695	0.600
L-allow me to express views to leadership		0.739

Table E-23. Inter-Item Correlation Statistics – Leader Integrity.

Inter-Item Correlation Matrix - Leaders Integrity

	L-are honest in their dealings with me	L-everyone is treated in a fair & consistent manner	L-I am proud to tell people I provide patient care here
L-set good examples responding to ethical dilemmas	0.635	0.632	0.521
L-are honest in their dealings with me		0.752	0.445
L-everyone is treated in a fair & consistent manner			0.497

Table E-24. Inter-Item Correlation Statistics – Leader Actions.

Inter-Item Correlation Matrix - Leaders Actions

	L-provide sufficient resources for mentoring actions	L-communicate effectively about changes affecting me	L-provides training need to deal with planned changes
L-make good decisions responding to financial limits	0.611	0.678	0.628
L-provide sufficient resources for mentoring actions		0.704	0.717
L-communicate effectively about changes affecting me			0.808

Table E-25. Inter-Item Correlation Statistics – Exhaustion.

Inter-Item Correlation Matrix - Exhaustion

	-conflict work & home responsibilities	-irritable anxious at home thinking about work	-work has desensitized feelings & emotions	-feel sad bc death or serious illness of patient	-experience physically exhausting workdays	-experience emotionally draining workdays
DD -fatigue from working late or nights	0.421	0.506	0.441	0.346	0.489	0.559
DD -conflict work & home responsibilities		0.467	0.268	0.361	0.301	0.379
DD -irritable anxious at home thinking about work			0.403	0.435	0.477	0.605
DD -work has desensitized feelings & emotions				0.291	0.315	0.390
DD -feel sad bc death or serious illness of patient					0.327	0.412
DD -experience physically exhausting workdays						0.792

Table E-26. Item-Total Statistics – Moral Distress.

Item-Total Statistics

Sub-Scale Moral Distress 4 items(Cronbach's alpha = 0.860)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DD -carry out complex tasks without consultation	0.782	0.791
DD -carry out specialized tasks without tech or staff	0.725	0.815
DD -experience frustrated from demanding patients	0.581	0.872
DD -observe compromises in care given to patients	0.746	0.806

Table E-27. Inter-Item Correlation Statistics – Hassles.

Inter-Item Correlation Matrix - Hassles

	-doing tasks NOT your responsibility	-observe poor orgn tests & treatments	-workdays with interruptions to your duties	-have to cover for staff who called in sick
DD -frustration accessing resources for patients	0.485	0.593	0.541	0.531
DD -doing tasks NOT your responsibility		0.581	0.585	0.445
DD -observe poor orgn tests & treatments			0.494	0.469
DD -workdays with interruptions to your duties				0.370

Table E-28. Item-Total Statistics – Hassles.

Item-Total Statistics

Sub-Scale Hassles 5 items (Cronbach's alpha = 0.838)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DD -doing tasks NOT your responsibility	0.664	0.800
DD -observe poor orgn tests & treatments	0.679	0.795
DD -workdays with interruptions to your duties	0.625	0.810
DD -frustration accessing resources for patients	0.682	0.795
DD -have to cover for staff who called in sick	0.558	0.828

Table E-29. Inter-Item Correlation Statistics – Positive Attitude.

Inter-Item Correlation Matrix - Positive Attitude

	can concentrate on tasks that need to be done	are in control of day to day work activities	confident of working at a high standards
DD RV-feel excited about the work you do	0.299	0.292	0.310
DD RV -can concentrate on tasks that need to be done		0.632	0.496
DD RV-are in control of day to day work activities			0.595

Table E-30. Item-Total Statistics – Positive Attitude.

Item-Total Statistics

Sub-Scale Positive Attitude 4 items (Cronbach's alpha = 0.757)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
DD RV-feel excited about the work you do	0.355	0.801
DD RV -can concentrate on tasks that need to be done	0.601	0.650
DD RV-are in control of day to day work activities	0.651	0.626
DD RV-confident of working at a high standards	0.590	0.656

Table E-31 Inter-Item Correlation Statistics –Q Personnel.

Inter-Item Correlation Matrix - Personnel

	Capabilities of Nursing Staff	Capabilities of Therapy Staff	Capablities of Technical Staff
Capabilities of Medical Staff	0.533	0.530	0.446
Capabilities of Nursing Staff		0.542	0.404
Capabilities of Therapy Staff			0.559

Table E-32 Item-Total Statistics – Q-People.

Item-Total Statistics

Sub-Scale Q-People 4 items (Cronbach's alpha = 0.801)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Capabilities of Medical Staff	0.607	0.742
Capabilities of Nursing Staff	0.591	0.751
Capabilities of Therapy Staff	0.681	0.698
Capablities of Technical Staff	0.572	0.770

Table E-33. Inter-Item Correlation Statistics – Q-Infrastructure.

Inter-Item Correlation Matrix - Infrastructure

	Suitability of Physical Facilities	Organization of Responsibilities
Access-Functioning of Equipment	0.643	0.548
Suitability of Physical Facilities		0.653

Table E-34. Item-Total Statistics – Q-Infrastructure.

Item-Total Statistics

Sub-Scale Q-Infra 3 items (Cronbach's alpha = 0.827)	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Access-Functioning of Equipment	0.657	0.788
Suitability of Physical Facilities	0.736	0.707
Organization of Responsibilities	0.663	0.782

Table E-35. All feasible path EQS model output printout

All Feasible Paths

```
 EQS, A STRUCTURAL EQUATION PROGRAM         MULTIVARIATE SOFTWARE, INC.
 COPYRIGHT BY P.M. BENTLER                  VERSION 6.3 (C) 1985 - 2016 (B114).

   PROGRAM CONTROL INFORMATION

    1  /TITLE
    2  Model built by EQS 6 for Windows
    3  /SPECIFICATIONS
    4  DATA='\\cabinet\work$\rel003\my documents\jacob dissertation\shr-hfxnursesq4-eqs
    5  234feb2017.ess';
    6  VARIABLES=151; CASES=234;
    7  METHOD=ML; ANALYSIS=COVARIANCE; MATRIX=RAW;
    8  /LABELS
    9  V1=ID#; V2=REGION; V3=CAPMDS; V4=CAPRNS; V5=CAPTHS;
   10  V6=CTECHS; V7=ACCEQPT; V8=FACILITY; V9=ORGRESP; V10=QUALITY;
   11  V11=UNIT; V12=MICVA; V13=LSTRESS; V14=RHEALTH; V15=REWARDS;
   12  V16=SOVERALL; V17=NRSQT; V18=AGE; V19=YRSPRC; V20=GENDER;
   13  V21=SQUALITY; V22=DACCESS; V23=DWKLATE; V24=DNOTRESP; V25=DPOORORG;
   14  V26=DISRUPT; V27=DCONFICT; V28=DANXIUS; V29=DCOVER; V30=DSENSTZE;
   15  V31=DSADILL; V32=DEMANDPT; V33=DICONSUL; V34=DITEKSUP; V35=DCOMPROM;
   16  V36=DEXHAUST; V37=DRAINED; V38=DEXCITED; V39=DCNCNTR8; V40=DAY2DAY;
   17  V41=DHIGHSTD; V42=EGRATIFY; V43=ECSOCITY; V44=EUSESKIL; V45=ECHOICES;
   18  V46=EACHIEVE; V47=EYTIME; V48=EYTRAING; V49=EYRESPS; V50=EYRISKS;
   19  V51=EYEXP; V52=ECHELTH; V53=EFFORTS; V54=ERESPECT; V55=EADMGTIT;
   20  V56=EINFLUNC; V57=EPAPPREC; V58=EPTFRECD; V59=ECADVNCE; V60=SRELPEER;
   21  V61=SRELPTS; V62=SDIVPTS; V63=SMETNEED; V64=SRESOURC; V65=SKEEPUP;
   22  V66=SROLEORG; V67=SRELMDS; V68=SRELADM; V69=SIMPROV; V70=SAUTHORT;
   23  V71=SCONTROL; V72=SINPLIFE; V73=SACTIVIT; V74=SINCOME; V75=SCADVNCE;
   24  V76=SMGPRAC; V77=SQPCUNIT; V78=SCAREER; V79=UWORKORG; V80=UPROFDEV;
   25  V81=UINIATV; V82=UDEVSKIL; V83=UBPRAC; V84=UCONSENS; V85=UCONTRIB;
   26  V86=LFVALUED; V87=LETHICS; V88=LDECISNS; V89=LEXIDEAS; V90=LHONEST;
   27  V91=LFAIRALL; V92=LPROCESS; V93=LMENTOR; V94=LPCHANG; V95=LTRAINCG;
   28  V96=LPROUD; V97=CUSCOOP; V98=CSTNDRDS; V99=CGOODIDS; V100=CRESERCH;
   29  V101=CORGCARE; V102=CHISTDS; V103=CLEARN; V104=CEVADER; V105=CSIKTIME;
   30  V106=CINCDNTS; V107=CBPRACS; V108=CGTHRDAY; V109=INTPLIFE; V110=DSTRSS20;
   31  V111=XHAUST7; V112=MORAL4; V113=HASSLE5; V114=NEGAT4; V115=NEGAT3;
   32  V116=EQUITY18; V117=FULFIL6; V118=PAYEQ5; V119=RECOG7; V120=SPERF13;
   33  V121=SPERF10; V122=SAPERF4; V123=SCPERF6; V124=SAPERF6; V125=SCPERF7;
   34  V126=UNITSUP7; V127=UNITORG4; V128=UNITDEV3; V129=LEAD11; V130=VLEAD3;
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35  V131=ILEAD4; V132=ALEAD4; V133=CULT12; V134=CULT11; V135=CULT10;
36  V136=BEHCULT6; V137=OBJCULT5; V138=QPEOPLE; V139=QINFRA; V140=QMDSRNS;
37  V141=QEQPTFAC; V142=QPEOPL3; V143=SAPERF10; V144=SCPERF10; V145=SATPERF;
38  V146=DEXCITEF; V147=DCNCNTRF; V148=DY2DYF; V149=DHISTDF; V150=POSAT4;
39  V151=POSAT3;
40  /EQUATIONS
41  V111 =   *F4 + E111;
42  V112 =   *F4 + E112;
43  V113 =   *F4 + E113;
44  V117 =   *F3 + E117;
45  V118 =   *F3 + E118;
46  V119 =   *F3 + E119;
47  V124 =   *F1 + E124;
48  V125 =   *F1 + E125;
49  V127 =   *F5 + E127;
50  V128 =   *F5 + E128;
51  V130 =   *F7 + E130;
52  V131 =   *F7 + E131;
53  V132 =   *F7 + E132;
54  V136 =   *F6 + E136;
55  V137 =   *F6 + E137;
56  V138 =   *F2 + E138;
57  V139 =   *F2 + E139;
58  V150 =   *F6 + E150;
59  F1 =   *F2 + *F3 + *F5 + *F6 + *V19 + D1;
60  F2 =   *F4 + *F5 + *F6 + D2;
61  F3 =   *F4 + *F5 + *V150 + D3;
62  F4 =   *F5 + *F6 + *F7 + D4;
63  F5 =   *F7 + D5;
64  F6 =   *F7 + D6;
65  /VARIANCES
66   V19 = *;
67   F7 = *;
68   F8 = *;
69   F9 = *;
70   E111 = *;
71   E112 = *;
72   E113 = *;
73   E117 = *;
74   E118 = *;
75   E119 = *;
76   E124 = *;
77   E125 = *;
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 79  E128 = *;
 80  E130 = *;
 81  E131 = *;
 82  E132 = *;
 83  E136 = *;
 84  E137 = *;
 85  E138 = *;
 86  E139 = *;
 87  E150 = *;
 88  D1 = *;
 89  D2 = *;
 90  D3 = *;
 91  D4 = *;
 92  D5 = *;
 93  D6 = *;
 94 /COVARIANCES
 95 /PRINT
 96 EIS;
 97 FIT=ALL;
 98 TABLE=EQUATION;
 99 /END

   99 RECORDS OF INPUT MODEL FILE WERE READ

 DATA IS READ FROM \\cabinet\work$\rel003\my documents\jacob dissertation\shr-hfxnursesq4-eqs234feb2017.ess
 THERE ARE 151 VARIABLES AND   234 CASES
 IT IS A RAW DATA ESS FILE

SAMPLE STATISTICS BASED ON COMPLETE CASES

                UNIVARIATE STATISTICS
                ---------------------

VARIABLE       YRSPRC    XHAUST7   MORAL4    HASSLE5   FULFIL6
MEAN           14.0983    3.3223    2.9904    4.0077    4.1588
SKEWNESS (G1)   0.5574    0.1147    0.2190   -0.3008   -0.4071
KURTOSIS (G2)  -0.9959   -0.6777   -0.9402   -0.6980    0.4070
STANDARD DEV.  11.1367    1.1007    1.2942    1.2607    0.8525

VARIABLE       PAYEQ5    RECOG7    SAPERF6   SCPERF7   UNITORG4
MEAN           2.9308    3.9634    3.8340    4.3462    4.1400
SKEWNESS (G1)  -0.4251   -0.3269   -0.5543   -0.7682   -0.9529
```

KURTOSIS (G2) -0.5344 -0.1009 0.0142 1.5480 1.5281
STANDARD DEV. 0.9356 0.6913 0.7217 0.5960 0.8119

VARIABLE UNITDEV3 VLEAD3 ILEAD4 ALEAD4 BEHCULT6
MEAN 4.0755 3.3946 3.7981 3.4487 2.9509
SKEWNESS (G1) -0.7710 -0.4369 -0.6015 -0.4912 0.0947
KURTOSIS (G2) -0.0230 -0.5629 0.1357 -0.4297 -0.3269
STANDARD DEV. 1.0038 1.1454 1.0255 1.1060 0.8244

VARIABLE OBJCULT5 QPEOPLE QINFRA POSAT4
MEAN 3.8137 78.5053 61.2678 4.2404
SKEWNESS (G1) -0.9634 -0.7230 -0.3239 -0.6488
KURTOSIS (G2) 1.9709 0.4419 0.0758 -0.0634
STANDARD DEV. 0.7777 9.2879 16.2247 1.0877

MULTIVARIATE KURTOSIS

MARDIA'S COEFFICIENT (G2,P) = 39.2635
NORMALIZED ESTIMATE = 10.6308

ELLIPTICAL THEORY KURTOSIS ESTIMATES

MARDIA-BASED KAPPA = 0.0984 MEAN SCALED UNIVARIATE KURTOSIS = 0.0135
MARDIA-BASED KAPPA IS USED IN COMPUTATION. KAPPA= 0.0984

CASE NUMBERS WITH LARGEST CONTRIBUTION TO NORMALIZED MULTIVARIATE KURTOSIS:

CASE NUMBER 63 67 79 92 100

ESTIMATE 392.8609 580.2230 1056.4900 380.1788 478.6625

COVARIANCE MATRIX TO BE ANALYZED: 19 VARIABLES (SELECTED FROM 151 VARIABLES)
BASED ON 234 CASES.

YRSPRC XHAUST7 MORAL4 HASSLE5 FULFIL6
V19 V111 V112 V113 V117
YRSPRC V19 124.027
XHAUST7 V111 -1.864 1.212
MORAL4 V112 -1.281 0.899 1.675
HASSLE5 V113 0.355 0.846 1.136 1.589

FULFIL6	V117	-0.047	-0.340	-0.251	-0.261	0.727
PAYEQ5	V118	-1.874	-0.263	-0.351	-0.279	0.228
RECOG7	V119	-0.943	-0.300	-0.379	-0.365	0.342
SAPERF6	V124	-0.290	-0.287	-0.354	-0.414	0.294
SCPERF7	V125	0.290	-0.258	-0.267	-0.293	0.351
UNITORG4	V127	-0.243	-0.326	-0.388	-0.476	0.325
UNITDEV3	V128	-1.793	-0.299	-0.500	-0.557	0.271
VLEAD3	V130	-1.266	-0.402	-0.508	-0.597	0.270
ILEAD4	V131	-0.716	-0.387	-0.455	-0.553	0.252
ALEAD4	V132	-1.175	-0.336	-0.469	-0.613	0.218
BEHCULT6	V136	-0.710	-0.281	-0.430	-0.486	0.211
OBJCULT5	V137	-0.474	-0.256	-0.409	-0.384	0.212
QPEOPLE	V138	-10.428	-1.376	-3.397	-3.001	0.928
QINFRA	V139	8.991	-6.064	-6.744	-8.070	3.604
POSAT4	V150	-0.196	-0.299	-0.183	-0.190	0.496

		PAYEQ5	RECOG7	SAPERF6	SCPERF7	UNITORG4
		V118	V119	V124	V125	V127
PAYEQ5	V118	0.875				
RECOG7	V119	0.256	0.478			
SAPERF6	V124	0.161	0.333	0.521		
SCPERF7	V125	0.113	0.255	0.260	0.355	
UNITORG4	V127	0.158	0.308	0.338	0.294	0.659
UNITDEV3	V128	0.245	0.346	0.403	0.282	0.620
VLEAD3	V130	0.260	0.410	0.479	0.253	0.494
ILEAD4	V131	0.225	0.333	0.410	0.235	0.475
ALEAD4	V132	0.236	0.355	0.459	0.240	0.490
BEHCULT6	V136	0.158	0.248	0.284	0.207	0.336
OBJCULT5	V137	0.107	0.224	0.279	0.226	0.363
QPEOPLE	V138	2.124	1.902	2.001	1.260	1.975
QINFRA	V139	2.349	4.134	4.718	4.016	5.752
POSAT4	V150	0.171	0.370	0.325	0.358	0.345

		UNITDEV3	VLEAD3	ILEAD4	ALEAD4	BEHCULT6
		V128	V130	V131	V132	V136
UNITDEV3	V128	1.008				
VLEAD3	V130	0.696	1.312			
ILEAD4	V131	0.638	1.003	1.052		
ALEAD4	V132	0.693	1.074	0.971	1.223	
BEHCULT6	V136	0.371	0.476	0.395	0.466	0.680
OBJCULT5	V137	0.446	0.389	0.429	0.425	0.359
QPEOPLE	V138	2.813	3.067	2.958	3.074	1.868
QINFRA	V139	6.118	7.173	6.752	7.456	5.145

```
 POSAT4   V150      0.286     0.383     0.312     0.287     0.238

             OBJCULT5   QPEOPLE    QINFRA     POSAT4
               V137      V138      V139      V150
 OBJCULT5 V137      0.605
 QPEOPLE  V138      2.416    86.266
 QINFRA   V139      4.874    62.459   263.240
 POSAT4   V150      0.257     2.225     6.409     1.183

BENTLER-WEEKS STRUCTURAL REPRESENTATION:

    NUMBER OF DEPENDENT VARIABLES = 24
       DEPENDENT V'S :  111  112  113  117  118  119  124  125  127  128
       DEPENDENT V'S :  130  131  132  136  137  138  139  150
       DEPENDENT F'S :    1    2    3    4    5    6

    NUMBER OF INDEPENDENT VARIABLES = 28
       INDEPENDENT V'S :   19
       INDEPENDENT F'S :    7    8    9
       INDEPENDENT E'S :  111  112  113  117  118  119  124  125  127  128
       INDEPENDENT E'S :  130  131  132  136  137  138  139  150
       INDEPENDENT D'S :    1    2    3    4    5    6

    NUMBER OF FREE PARAMETERS =  62
    NUMBER OF FIXED NONZERO PARAMETERS =  24

*** WARNING *** INDEPENDENT VARIABLE F8   DOES NOT APPEAR IN ANY EQUATION.

*** WARNING *** INDEPENDENT VARIABLE F9   DOES NOT APPEAR IN ANY EQUATION.

*** WARNING MESSAGES ABOVE, IF ANY, REFER TO THE MODEL PROVIDED.
   CALCULATIONS FOR INDEPENDENCE MODEL NOW BEGIN.

*** WARNING MESSAGES ABOVE, IF ANY, REFER TO INDEPENDENCE MODEL.
   CALCULATIONS FOR USER'S MODEL NOW BEGIN.

 3RD STAGE OF COMPUTATION REQUIRED     77959 WORDS OF MEMORY.
 PROGRAM ALLOCATED  20000000 WORDS

 DETERMINANT OF INPUT MATRIX IS   0.19686D+01

 PARAMETER       CONDITION CODE
  F8,F8         LINEARLY DEPENDENT ON OTHER PARAMETERS
```

F9,F9 LINEARLY DEPENDENT ON OTHER PARAMETERS
V132,F7 LINEARLY DEPENDENT ON OTHER PARAMETERS
F1,V19 LINEARLY DEPENDENT ON OTHER PARAMETERS
F5,F7 LINEARLY DEPENDENT ON OTHER PARAMETERS
V111,F4 LINEARLY DEPENDENT ON OTHER PARAMETERS
V118,F3 LINEARLY DEPENDENT ON OTHER PARAMETERS
V136,F6 LINEARLY DEPENDENT ON OTHER PARAMETERS
V139,F2 LINEARLY DEPENDENT ON OTHER PARAMETERS

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)
F8,F8 VARIANCE OF PARAMETER ESTIMATE IS SET TO ZERO.
F9,F9 VARIANCE OF PARAMETER ESTIMATE IS SET TO ZERO.
F5,F7 VARIANCE OF PARAMETER ESTIMATE IS SET TO ZERO.
V111,F4 VARIANCE OF PARAMETER ESTIMATE IS SET TO ZERO.

RESIDUAL COVARIANCE MATRIX (S-SIGMA) :

	YRSPRC	XHAUST7	MORAL4	HASSLE5	FULFIL6
	V19	V111	V112	V113	V117
YRSPRC V19	0.000				
XHAUST7 V111	-1.864	0.017			
MORAL4 V112	-1.281	0.053	0.029		
HASSLE5 V113	0.355	0.004	0.022	0.029	
FULFIL6 V117	-0.047	-0.063	0.116	0.104	0.017
PAYEQ5 V118	-1.874	-0.105	-0.142	-0.071	0.013
RECOG7 V119	-0.943	-0.046	-0.043	-0.030	-0.005
SAPERF6 V124	-0.876	-0.012	0.009	-0.052	-0.032
SCPERF7 V125	-0.207	-0.026	0.041	0.014	0.075
UNITORG4 V127	-0.243	-0.055	-0.029	-0.119	0.065
UNITDEV3 V128	-1.793	0.048	-0.041	-0.100	-0.062
VLEAD3 V130	-1.266	0.022	0.053	-0.039	-0.086
ILEAD4 V131	-0.716	-0.001	0.055	-0.045	-0.073
ALEAD4 V132	-1.175	0.077	0.077	-0.069	-0.129
BEHCULT6 V136	-0.710	0.006	-0.050	-0.108	0.004
OBJCULT5 V137	-0.474	0.020	-0.044	-0.021	0.013
QPEOPLE V138	-10.428	0.817	-0.494	-0.112	-0.532
QINFRA V139	8.991	-0.697	0.359	-0.999	0.030
POSAT4 V150	-0.196	-0.090	0.094	0.086	0.087

	PAYEQ5	RECOG7	SAPERF6	SCPERF7	UNITORG4
	V118	V119	V124	V125	V127
PAYEQ5 V118	0.005				
RECOG7 V119	0.059	0.014			

SAPERF6	V124	-0.025	0.034	0.014	
SCPERF7	V125	-0.044	0.002	0.005	0.010
UNITORG4	V127	0.009	0.069	0.062	0.060	0.000
UNITDEV3	V128	0.055	0.039	0.050	-0.018	-0.000
VLEAD3	V130	0.057	0.082	0.086	-0.081	-0.047
ILEAD4	V131	0.040	0.035	0.052	-0.068	-0.018
ALEAD4	V132	0.038	0.036	0.076	-0.084	-0.037
BEHCULT6	V136	0.040	0.058	0.046	0.006	0.105
OBJCULT5	V137	-0.006	0.042	0.050	0.033	0.141
QPEOPLE	V138	1.292	0.562	0.380	-0.114	0.158
QINFRA	V139	0.311	0.854	0.750	0.652	1.303
POSAT4	V150	-0.062	-0.005	-0.024	0.062	0.176

	UNITDEV3 V128	VLEAD3 V130	ILEAD4 V131	ALEAD4 V132	BEHCULT6 V136
UNITDEV3 V128	0.000				
VLEAD3 V130	0.003	-0.000			
ILEAD4 V131	0.007	0.005	-0.000		
ALEAD4 V132	0.018	0.006	-0.001	-0.000	
BEHCULT6 V136	0.074	0.007	-0.033	0.009	-0.000
OBJCULT5 V137	0.162	-0.062	0.019	-0.014	0.004
QPEOPLE V138	0.485	0.031	0.194	0.118	-0.247
QINFRA V139	0.419	-0.259	-0.013	0.223	-0.033
POSAT4 V150	0.070	0.041	0.001	-0.046	-0.031

	OBJCULT5 V137	QPEOPLE V138	QINFRA V139	POSAT4 V150
OBJCULT5 V137	-0.000			
QPEOPLE V138	0.386	0.660		
QINFRA V139	-0.096	1.586	3.953	
POSAT4 V150	-0.002	0.684	2.638	-0.000

AVERAGE ABSOLUTE RESIDUAL = 0.3252

AVERAGE OFF-DIAGONAL ABSOLUTE RESIDUAL = 0.3336

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

STANDARDIZED RESIDUAL MATRIX:

	YRSPRC V19	XHAUST7 V111	MORAL4 V112	HASSLE5 V113	FULFIL6 V117
YRSPRC V19	0.000				
XHAUST7 V111	-0.152	0.014			

MORAL4	V112	-0.089	0.037	0.017	
HASSLE5	V113	0.025	0.003	0.014	0.018
FULFIL6	V117	-0.005	-0.067	0.105	0.097	0.023
PAYEQ5	V118	-0.180	-0.102	-0.118	-0.060	0.017
RECOG7	V119	-0.122	-0.060	-0.048	-0.034	-0.008
SAPERF6	V124	-0.109	-0.015	0.010	-0.057	-0.052
SCPERF7	V125	-0.031	-0.039	0.053	0.018	0.148
UNITORG4	V127	-0.027	-0.061	-0.028	-0.116	0.094
UNITDEV3	V128	-0.160	0.044	-0.032	-0.079	-0.073
VLEAD3	V130	-0.099	0.018	0.036	-0.027	-0.088
ILEAD4	V131	-0.063	-0.001	0.042	-0.035	-0.083
ALEAD4	V132	-0.095	0.063	0.054	-0.050	-0.137
BEHCULT6	V136	-0.077	0.007	-0.047	-0.104	0.006
OBJCULT5	V137	-0.055	0.023	-0.044	-0.022	0.020
QPEOPLE	V138	-0.101	0.080	-0.041	-0.010	-0.067
QINFRA	V139	0.050	-0.039	0.017	-0.049	0.002
POSAT4	V150	-0.016	-0.075	0.067	0.062	0.093

		PAYEQ5	RECOG7	SAPERF6	SCPERF7	UNITORG4
		V118	V119	V124	V125	V127
PAYEQ5	V118	0.006				
RECOG7	V119	0.091	0.029			
SAPERF6	V124	-0.037	0.068	0.028		
SCPERF7	V125	-0.079	0.004	0.012	0.029	
UNITORG4	V127	0.012	0.123	0.106	0.124	0.000
UNITDEV3	V128	0.059	0.057	0.069	-0.029	-0.001
VLEAD3	V130	0.053	0.104	0.104	-0.118	-0.051
ILEAD4	V131	0.041	0.049	0.070	-0.112	-0.021
ALEAD4	V132	0.037	0.047	0.095	-0.128	-0.041
BEHCULT6	V136	0.052	0.101	0.076	0.011	0.156
OBJCULT5	V137	-0.008	0.078	0.090	0.070	0.223
QPEOPLE	V138	0.149	0.087	0.057	-0.021	0.021
QINFRA	V139	0.020	0.076	0.064	0.067	0.099
POSAT4	V150	-0.061	-0.007	-0.030	0.095	0.199

		UNITDEV3	VLEAD3	ILEAD4	ALEAD4	BEHCULT6
		V128	V130	V131	V132	V136
UNITDEV3	V128	0.000				
VLEAD3	V130	0.002	-0.000			
ILEAD4	V131	0.006	0.004	-0.000		
ALEAD4	V132	0.016	0.005	-0.001	-0.000	
BEHCULT6	V136	0.090	0.007	-0.039	0.010	-0.000

OBJCULT5	V137	0.207	-0.070	0.024	-0.016	0.006
QPEOPLE	V138	0.052	0.003	0.020	0.011	-0.032
QINFRA	V139	0.026	-0.014	-0.001	0.012	-0.002
POSAT4	V150	0.064	0.033	0.001	-0.038	-0.035

	OBJCULT5	QPEOPLE	QINFRA	POSAT4
	V137	V138	V139	V150
OBJCULT5	V137	-0.000		
QPEOPLE	V138	0.053	0.008	
QINFRA	V139	-0.008	0.011	0.015
POSAT4	V150	-0.002	0.068	0.149	-0.000

AVERAGE ABSOLUTE STANDARDIZED RESIDUAL = 0.0518

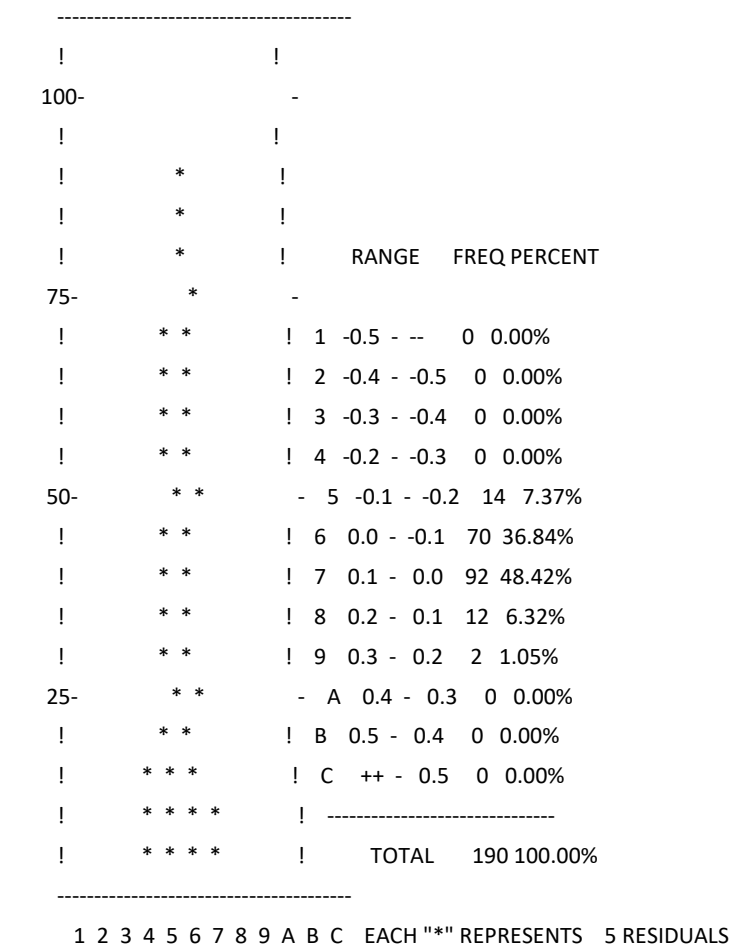
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUAL = 0.0565

LARGEST STANDARDIZED RESIDUALS:

NO.	PARAMETER	ESTIMATE	NO.	PARAMETER	ESTIMATE
1	V137,V127	0.223	11	V132,V117	-0.137
2	V137,V128	0.207	12	V132,V125	-0.128
3	V150,V127	0.199	13	V127,V125	0.124
4	V118,V19	-0.180	14	V127,V119	0.123
5	V128,V19	-0.160	15	V119,V19	-0.122
6	V136,V127	0.156	16	V130,V125	-0.118
7	V111,V19	-0.152	17	V118,V112	-0.118
8	V150,V139	0.149	18	V127,V113	-0.116
9	V138,V118	0.149	19	V131,V125	-0.112
10	V125,V117	0.148	20	V124,V19	-0.109

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

DISTRIBUTION OF STANDARDIZED RESIDUALS



MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

*** WARNING *** TEST RESULTS MAY NOT BE APPROPRIATE DUE TO CONDITION CODE

GOODNESS OF FIT SUMMARY FOR METHOD = ML

INDEPENDENCE MODEL CHI-SQUARE = 2763.438 ON 171 DEGREES OF FREEDOM

INDEPENDENCE AIC = 2421.438 INDEPENDENCE CAIC = 1659.578
MODEL AIC = 90.591 MODEL CAIC = -479.690

AKAIKE INFORMATION CRITERION (AIC) BASED ON LOG LIKELIHOOD = 13226.610
BAYESIAN INFORMATION CRITERION (BIC) BASED ON LOG LIKELIHOOD = 13440.840

CHI-SQUARE = 346.591 BASED ON 128 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS 0.00000

THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS 389.015.

FIT INDICES

BENTLER-BONETT NORMED FIT INDEX = 0.875
BENTLER-BONETT NON-NORMED FIT INDEX = 0.887
COMPARATIVE FIT INDEX (CFI) = 0.916
BOLLEN'S (IFI) FIT INDEX = 0.917
MCDONALD'S (MFI) FIT INDEX = 0.627
JORESKOG-SORBOM'S GFI FIT INDEX = 0.851
JORESKOG-SORBOM'S AGFI FIT INDEX = 0.778
ROOT MEAN-SQUARE RESIDUAL (RMR) = 1.132
STANDARDIZED RMR = 0.069
ROOT MEAN-SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.086
90% CONFIDENCE INTERVAL OF RMSEA (0.075, 0.096)

RELIABILITY COEFFICIENTS

CRONBACH'S ALPHA = 0.373
RELIABILITY COEFFICIENT RHO = 0.720

ITERATIVE SUMMARY

ITERATION	PARAMETER ABS CHANGE	ALPHA	FUNCTION
1	8.602613	1.00000	30.65371
2	653.451416	1.00000	20.61537
3	1145.455322	1.00000	16.22196
4	594.503540	0.50000	15.67331
5	553.748657	1.00000	15.51344
6	478.547546	1.00000	15.03894
7	1029.716064	1.00000	13.63586
8	1214.560913	1.00000	11.97636
9	263.330750	1.00000	10.53889
10	59.376484	1.00000	10.01238
11	97.278694	0.25000	9.81596
12	152.961716	1.00000	8.63407
13	196.090881	1.00000	7.28846
14	169.649063	1.00000	6.03399
15	245.935333	1.00000	4.95662

16	74.139175	1.00000	3.40090
17	316.284454	1.00000	1.78895
18	25.032146	1.00000	1.50971
19	2.430171	0.22530	1.50620
20	4.582855	0.03698	1.50570
21	6.174057	0.02404	1.50536
22	2.135584	0.01978	1.50510
23	2.231881	0.01790	1.50491
24	2.359921	0.01659	1.50479
25	2.542814	0.01527	1.50472
26	2.719272	0.01319	1.50469
27	2.934918	0.00948	1.50464
28	17.211739	0.00736	1.50458
29	3.300034	0.00668	1.50454
30	3.489119	0.00660	1.50452
31	3.669524	0.00655	1.50453
32	26.784822	0.00683	1.50457
33	29.653170	0.00963	1.50483
34	4.677988	0.00592	1.50493
35	5.119880	0.00519	1.50503
36	5.511623	0.00392	1.50508
37	5.897701	0.00235	1.50507
38	46.620327	0.01053	1.50631
39	7.272153	0.01001	1.50811
40	8.979473	0.00991	1.51111
41	11.509265	0.00867	1.51498
42	14.744091	0.00386	1.51607
43	17.076057	0.01264	1.53687
44	19.486401	0.00100	1.53691
45	20.386162	0.01209	1.56079
46	1.406507	1.00000	1.49130
47	0.399935	1.00000	1.48793
48	0.276752	1.00000	1.48759
49	0.126604	1.00000	1.48753
50	0.016796	1.00000	1.48752
51	0.011888	1.00000	1.48752
52	0.011631	1.00000	1.48752
53	0.001684	0.01562	1.48752
54	0.001705	0.01562	1.48752
55	0.001451	0.01562	1.48752
56	0.001685	0.01562	1.48752
57	0.001339	0.01562	1.48752
58	0.001775	0.01562	1.48752

59	0.001399	0.01562	1.48752
60	0.001638	0.01562	1.48752
61	0.001281	0.01562	1.48752
62	0.001553	0.01562	1.48752
63	0.001469	0.01562	1.48752
64	0.001523	0.01562	1.48752
65	0.001491	0.01562	1.48752
66	0.001213	0.01562	1.48752
67	0.001480	0.01562	1.48752
68	0.001722	0.01562	1.48752
69	0.001878	0.01562	1.48752
70	0.001903	0.01562	1.48752
71	0.002039	0.01562	1.48752
72	0.001907	0.01562	1.48752
73	0.001660	0.01562	1.48752
74	0.001696	0.01562	1.48752
75	0.001849	0.01562	1.48752
76	0.001778	0.01562	1.48752
77	0.001630	0.01562	1.48752
78	0.001850	0.01562	1.48752
79	0.001779	0.01562	1.48752
80	0.001793	0.01562	1.48752
81	0.001934	0.01562	1.48752
82	0.002068	0.01562	1.48752
83	0.003237	0.01562	1.48752
84	0.003132	0.01562	1.48752
85	0.003138	0.01562	1.48752
86	0.003748	0.01562	1.48752
87	0.003251	0.01562	1.48752
88	0.003221	0.01562	1.48752
89	0.003114	0.01562	1.48752
90	0.003087	0.01562	1.48752
91	0.003176	0.01562	1.48752
92	0.003133	0.01562	1.48752
93	0.003050	0.01562	1.48752
94	0.002997	0.01562	1.48752
95	0.003004	0.01562	1.48752
96	0.002956	0.01562	1.48752
97	0.003088	0.01562	1.48752
98	0.003062	0.01562	1.48752
99	0.003168	0.01562	1.48752
100	0.003145	0.01562	1.48752
101	0.002992	0.01562	1.48752

102	0.003036	0.01562	1.48752
103	0.002868	0.01562	1.48752
104	0.003146	0.01562	1.48752
105	0.002784	0.01562	1.48752
106	0.003169	0.01562	1.48752
107	0.003117	0.01562	1.48752
108	0.002776	0.01562	1.48752
109	0.002705	0.01562	1.48752
110	0.003076	0.01562	1.48752
111	0.002780	0.01562	1.48752
112	0.002364	0.01562	1.48752
113	0.002626	0.01562	1.48752
114	0.002661	0.01562	1.48752
115	0.002668	0.01562	1.48752
116	0.002357	0.01562	1.48752
117	0.002549	0.01562	1.48752
118	0.002588	0.01562	1.48752
119	0.002570	0.01562	1.48752
120	0.002326	0.01562	1.48752
121	0.002474	0.01562	1.48752
122	0.002592	0.01562	1.48752
123	0.002365	0.01562	1.48752
124	0.002313	0.01562	1.48752
125	0.002320	0.01562	1.48752
126	0.002517	0.01562	1.48752
127	0.002364	0.01562	1.48752
128	0.002227	0.01562	1.48752
129	0.002391	0.01562	1.48752
130	0.002446	0.01562	1.48752
131	0.002426	0.01562	1.48752
132	0.002373	0.01562	1.48752
133	0.002301	0.01562	1.48752
134	0.002305	0.01562	1.48752
135	0.002288	0.01562	1.48752
136	0.002203	0.01562	1.48752
137	0.002229	0.01562	1.48752
138	0.002223	0.01562	1.48752
139	0.002145	0.01562	1.48752
140	0.002204	0.01562	1.48752
141	0.002120	0.01562	1.48752
142	0.002176	0.01562	1.48752
143	0.002148	0.01562	1.48752
144	0.002163	0.01562	1.48752

145	0.002058	0.01562	1.48752
146	0.002136	0.01562	1.48752
147	0.002071	0.01562	1.48752
148	0.002034	0.01562	1.48752
149	0.002021	0.01562	1.48752
150	0.002103	0.01562	1.48752
151	0.002017	0.01562	1.48752
152	0.001913	0.01562	1.48752
153	0.001984	0.01562	1.48752
154	0.001941	0.01562	1.48752
155	0.001953	0.01562	1.48752
156	0.001908	0.01562	1.48752
157	0.001967	0.01562	1.48752
158	0.001987	0.01562	1.48752
159	0.001810	0.01562	1.48752
160	0.001989	0.01562	1.48752
161	0.001954	0.01562	1.48752
162	0.001842	0.01562	1.48752
163	0.001880	0.01562	1.48752
164	0.001812	0.01562	1.48752
165	0.001858	0.01562	1.48752
166	0.001845	0.01562	1.48752
167	0.001856	0.01562	1.48752
168	0.001734	0.01562	1.48752
169	0.001809	0.01562	1.48752
170	0.001844	0.01562	1.48752
171	0.001690	0.01562	1.48752
172	0.002072	0.01562	1.48752
173	0.002059	0.01562	1.48752
174	0.002044	0.01562	1.48752
175	0.001987	0.01562	1.48752
176	0.001729	0.01562	1.48752
177	0.001999	0.01562	1.48752
178	0.001995	0.01562	1.48752
179	0.001923	0.01562	1.48752
180	0.001685	0.01562	1.48752
181	0.001945	0.01562	1.48752
182	0.001668	0.01562	1.48752
183	0.001896	0.01562	1.48752
184	0.001866	0.01562	1.48752
185	0.001913	0.01562	1.48752
186	0.001624	0.01562	1.48752
187	0.001869	0.01562	1.48752

188	0.001855	0.01562	1.48752
189	0.001812	0.01562	1.48752
190	0.001623	0.01562	1.48752
191	0.001780	0.01562	1.48752
192	0.001808	0.01562	1.48752
193	0.001604	0.01562	1.48752
194	0.001590	0.01562	1.48752
195	0.001734	0.01562	1.48752
196	0.001705	0.01562	1.48752
197	0.001684	0.01562	1.48752
198	0.001734	0.01562	1.48752
199	0.001682	0.01562	1.48752
200	0.001484	0.01562	1.48752
201	0.001498	0.01562	1.48752
202	0.001463	0.01562	1.48752
203	0.001654	0.01562	1.48752
204	0.001441	0.01562	1.48752
205	0.001456	0.01562	1.48752
206	0.001406	0.01562	1.48752
207	0.001432	0.01562	1.48752
208	0.001594	0.01562	1.48752
209	0.001580	0.01562	1.48752
210	0.001534	0.01562	1.48752
211	0.001568	0.01562	1.48752
212	0.001355	0.01562	1.48752
213	0.001497	0.01562	1.48752
214	0.001191	0.01562	1.48752
215	0.001181	0.01562	1.48752
216	0.001314	0.01562	1.48752
217	0.001129	0.01562	1.48752
218	0.001317	0.01562	1.48752
219	0.001131	0.01562	1.48752
220	0.001131	0.01562	1.48752
221	0.001080	0.01562	1.48752
222	0.001114	0.01562	1.48752
223	0.001072	0.01562	1.48752
224	0.001225	0.01562	1.48752
225	0.001247	0.01562	1.48752
226	0.001246	0.01562	1.48752
227	0.001065	0.01562	1.48752
228	0.001019	0.01562	1.48752
229	0.001040	0.01562	1.48752
230	0.001010	0.01562	1.48752

231 0.001000 1.00000 1.48752

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

STANDARDIZED SOLUTION: R-SQUARED

XHAUST7 =V111= .731*F4 + .682 E111 .535
MORAL4 =V112= .824*F4 + .566 E112 .680
HASSLE5 =V113= .843*F4 + .538 E113 .710
FULFIL6 =V117= .729*F3 + .684 E117 .532
PAYEQ5 =V118= .376*F3 + .927 E118 .141
RECOG7 =V119= .828*F3 + .561 E119 .685
SAPERF6 =V124= .771*F1 + .637 E124 .594
SCPERF7 =V125= .792*F1 + .611 E125 .627
UNITORG4=V127= .857*F5 + .516 E127 .734
UNITDEV3=V128= .888*F5 + .460 E128 .788
VLEAD3 =V130= .914*F7 + .405 E130 .836
ILEAD4 =V131= .930*F7 + .369 E131 .864
ALEAD4 =V132= .922*F7 + .388 E132 .849
BEHCULT6=V136= .738*F6 + .675 E136 .544
OBJCULT5=V137= .751*F6 + .661 E137 .564
QPEOPLE =V138= .539*F2 + .842 E138 .291
QINFRA =V139= .758*F2 + .652 E139 .575
POSAT4 =V150= .407*F6 + .913 E150 .166

F1 =F1 = .013*F2 + .761*F3 + .138*F5
+ .207*F6 + .096*V19 + .000 D1 1.000
F2 =F2 = -.172*F4 + .163*F5 + .507*F6
+ .683 D2 .533
F3 =F3 = .464*V150 - .270*F4 + .374*F5
+ .579 D3 .665
F4 =F4 = -.247*F5 - .476*F6 + .028*F7
+ .783 D4 .387
F5 =F5 = .743*F7 + .669 D5 .552
F6 =F6 = .737*F7 + .676 D6 .543

E N D O F M E T H O D

1

today is 2017/02/03
Execution begins at 07:47:03
Execution ends at 07:47:05

G-36. Parsimonious Model EQS output printout

Parsimonious Paths

```
EQS, A STRUCTURAL EQUATION PROGRAM        MULTIVARIATE SOFTWARE, INC.
COPYRIGHT BY P.M. BENTLER                 VERSION 6.3 (C) 1985 - 2016 (B114).

 PROGRAM CONTROL INFORMATION

  1  /TITLE
  2  Model built by EQS 6 for Windows
  3  /SPECIFICATIONS
  4  DATA='\\cabinet\work$\rel003\my documents\jacob dissertation\shr-hfxnursesq4-eqs
  5  234feb2017.ess';
  6  VARIABLES=151; CASES=234;
  7  METHOD=ML; ANALYSIS=COVARIANCE; MATRIX=RAW;
  8  /LABELS
  9  V1=ID#; V2=REGION; V3=CAPMDS; V4=CAPRNS; V5=CAPTHS;
 10  V6=CTECHS; V7=ACCEQPT; V8=FACILITY; V9=ORGRESP; V10=QUALITY;
 11  V11=UNIT; V12=MICVA; V13=LSTRESS; V14=RHEALTH; V15=REWARDS;
 12  V16=SOVERALL; V17=NRSQT; V18=AGE; V19=YRSPRC; V20=GENDER;
 13  V21=SQUALITY; V22=DACCESS; V23=DWKLATE; V24=DNOTRESP; V25=DPOORORG;
 14  V26=DISRUPT; V27=DCONFICT; V28=DANXIUS; V29=DCOVER; V30=DSENSTZE;
 15  V31=DSADILL; V32=DEMANDPT; V33=DICONSUL; V34=DITEKSUP; V35=DCOMPROM;
 16  V36=DEXHAUST; V37=DRAINED; V38=DEXCITED; V39=DCNCNTR8; V40=DAY2DAY;
 17  V41=DHIGHSTD; V42=EGRATIFY; V43=ECSOCITY; V44=EUSESKIL; V45=ECHOICES;
 18  V46=EACHIEVE; V47=EYTIME; V48=EYTRAING; V49=EYRESPS; V50=EYRISKS;
 19  V51=EYEXP; V52=ECHELTH; V53=EFFORTS; V54=ERESPECT; V55=EADMGTIT;
 20  V56=EINFLUNC; V57=EPAPPREC; V58=EPTFRECD; V59=ECADVNCE; V60=SRELPEER;
 21  V61=SRELPTS; V62=SDIVPTS; V63=SMETNEED; V64=SRESOURC; V65=SKEEPUP;
 22  V66=SROLEORG; V67=SRELMDS; V68=SRELADM; V69=SIMPROV; V70=SAUTHORT;
 23  V71=SCONTROL; V72=SINPLIFE; V73=SACTIVIT; V74=SINCOME; V75=SCADVNCE;
 24  V76=SMGPRAC; V77=SQPCUNIT; V78=SCAREER; V79=UWORKORG; V80=UPROFDEV;
 25  V81=UINIATV; V82=UDEVSKIL; V83=UBPRAC; V84=UCONSENS; V85=UCONTRIB;
 26  V86=LFVALUED; V87=LETHICS; V88=LDECISNS; V89=LEXIDEAS; V90=LHONEST;
 27  V91=LFAIRALL; V92=LPROCESS; V93=LMENTOR; V94=LPCHANG; V95=LTRAINCG;
 28  V96=LPROUD; V97=CUSCOOP; V98=CSTNDRDS; V99=CGOODIDS; V100=CRESERCH;
 29  V101=CORGCARE; V102=CHISTDS; V103=CLEARN; V104=CEVADER; V105=CSIKTIME;
 30  V106=CINCDNTS; V107=CBPRACS; V108=CGTHRDAY; V109=INTPLIFE; V110=DSTRSS20;
 31  V111=XHAUST7; V112=MORAL4; V113=HASSLE5; V114=NEGAT4; V115=NEGAT3;
 32  V116=EQUITY18; V117=FULFIL6; V118=PAYEQ5; V119=RECOG7; V120=SPERF13;
 33  V121=SPERF10; V122=SAPERF4; V123=SCPERF6; V124=SAPERF6; V125=SCPERF7;
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34  V126=UNITSUP7; V127=UNITORG4; V128=UNITDEV3; V129=LEAD11; V130=VLEAD3;
35  V131=ILEAD4; V132=ALEAD4; V133=CULT12; V134=CULT11; V135=CULT10;
36  V136=BEHCULT6; V137=OBJCULT5; V138=QPEOPLE; V139=QINFRA; V140=QMDSRNS;
37  V141=QEQPTFAC; V142=QPEOPL3; V143=SAPERF10; V144=SCPERF10; V145=SATPERF;
38  V146=DEXCITEF; V147=DCNCNTRF; V148=DY2DYF; V149=DHISTDF; V150=POSAT4;
39  V151=POSAT3;
40  /EQUATIONS
41  V111 =   *F4 + E111;
42  V112 =   *F4 + E112;
43  V113 =   *F4 + E113;
44  V117 =   *F3 + E117;
45  V118 =   *F3 + E118;
46  V119 =   *F3 + E119;
47  V124 =   *F1 + E124;
48  V125 =   *F1 + E125;
49  V127 =   *F5 + E127;
50  V128 =   *F5 + E128;
51  V130 =   *F7 + E130;
52  V131 =   *F7 + E131;
53  V132 =   *F7 + E132;
54  V136 =   *F6 + E136;
55  V137 =   *F6 + E137;
56  V138 =   *F1 + E138;
57  V139 =   *F1 + E139;
58  V150 =   *F6 + E150;
59  F1 =   *F3 + *V19 + D1;
60  F3 =   *F4 + *F5 + *V150 + D3;
61  F4 =   *F5 + *F6 + D4;
62  F5 =   *F7 + D5;
63  F6 =   *F7 + D6;
64  /VARIANCES
65   V19 = *;
66   F7 = *;
67   F8 = *;
68   F9 = *;
69   E111 = *;
70   E112 = *;
71   E113 = *;
72   E117 = *;
73   E118 = *;
74   E119 = *;
75   E124 = *;
76   E125 = *;
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 77  E127 = *;
 78  E128 = *;
 79  E130 = *;
 80  E131 = *;
 81  E132 = *;
 82  E136 = *;
 83  E137 = *;
 84  E138 = *;
 85  E139 = *;
 86  E150 = *;
 87  D1 = *;
 88  D3 = *;
 89  D4 = *;
 90  D5 = *;
 91  D6 = *;
 92 /COVARIANCES
 93 /PRINT
 94 EIS;
 95 FIT=ALL;
 96 TABLE=EQUATION;
 97 /END

   97 RECORDS OF INPUT MODEL FILE WERE READ

 DATA IS READ FROM \\cabinet\work$\rel003\my documents\jacob dissertation\shr-hfxnursesq4-eqs234feb2017.ess
 THERE ARE 151 VARIABLES AND   234 CASES
 IT IS A RAW DATA ESS FILE

SAMPLE STATISTICS BASED ON COMPLETE CASES

                UNIVARIATE STATISTICS
                ---------------------

VARIABLE       YRSPRC    XHAUST7    MORAL4    HASSLE5    FULFIL6
MEAN          14.0983     3.3223     2.9904     4.0077     4.1588
SKEWNESS (G1)     0.5574     0.1147     0.2190    -0.3008    -0.4071
KURTOSIS (G2)    -0.9959    -0.6777    -0.9402    -0.6980     0.4070
STANDARD DEV.    11.1367     1.1007     1.2942     1.2607     0.8525

VARIABLE       PAYEQ5     RECOG7     SAPERF6    SCPERF7    UNITORG4
MEAN           2.9308     3.9634     3.8340     4.3462     4.1400
SKEWNESS (G1)    -0.4251    -0.3269    -0.5543    -0.7682    -0.9529
KURTOSIS (G2)    -0.5344    -0.1009     0.0142     1.5480     1.5281
```

STANDARD DEV. 0.9356 0.6913 0.7217 0.5960 0.8119

VARIABLE UNITDEV3 VLEAD3 ILEAD4 ALEAD4 BEHCULT6
MEAN 4.0755 3.3946 3.7981 3.4487 2.9509
SKEWNESS (G1) -0.7710 -0.4369 -0.6015 -0.4912 0.0947
KURTOSIS (G2) -0.0230 -0.5629 0.1357 -0.4297 -0.3269
STANDARD DEV. 1.0038 1.1454 1.0255 1.1060 0.8244

VARIABLE OBJCULT5 QPEOPLE QINFRA POSAT4
MEAN 3.8137 78.5053 61.2678 4.2404
SKEWNESS (G1) -0.9634 -0.7230 -0.3239 -0.6488
KURTOSIS (G2) 1.9709 0.4419 0.0758 -0.0634
STANDARD DEV. 0.7777 9.2879 16.2247 1.0877

MULTIVARIATE KURTOSIS

MARDIA'S COEFFICIENT (G2,P) = 39.2635
NORMALIZED ESTIMATE = 10.6308

ELLIPTICAL THEORY KURTOSIS ESTIMATES

MARDIA-BASED KAPPA = 0.0984 MEAN SCALED UNIVARIATE KURTOSIS = 0.0135
MARDIA-BASED KAPPA IS USED IN COMPUTATION. KAPPA= 0.0984

CASE NUMBERS WITH LARGEST CONTRIBUTION TO NORMALIZED MULTIVARIATE KURTOSIS:

CASE NUMBER 63 67 79 92 100

ESTIMATE 392.8609 580.2230 1056.4900 380.1788 478.6625

COVARIANCE MATRIX TO BE ANALYZED: 19 VARIABLES (SELECTED FROM 151 VARIABLES)
BASED ON 234 CASES.

YRSPRC XHAUST7 MORAL4 HASSLE5 FULFIL6
V19 V111 V112 V113 V117
YRSPRC V19 124.027
XHAUST7 V111 -1.864 1.212
MORAL4 V112 -1.281 0.899 1.675
HASSLE5 V113 0.355 0.846 1.136 1.589
FULFIL6 V117 -0.047 -0.340 -0.251 -0.261 0.727

PAYEQ5	V118	-1.874	-0.263	-0.351	-0.279	0.228
RECOG7	V119	-0.943	-0.300	-0.379	-0.365	0.342
SAPERF6	V124	-0.290	-0.287	-0.354	-0.414	0.294
SCPERF7	V125	0.290	-0.258	-0.267	-0.293	0.351
UNITORG4	V127	-0.243	-0.326	-0.388	-0.476	0.325
UNITDEV3	V128	-1.793	-0.299	-0.500	-0.557	0.271
VLEAD3	V130	-1.266	-0.402	-0.508	-0.597	0.270
ILEAD4	V131	-0.716	-0.387	-0.455	-0.553	0.252
ALEAD4	V132	-1.175	-0.336	-0.469	-0.613	0.218
BEHCULT6	V136	-0.710	-0.281	-0.430	-0.486	0.211
OBJCULT5	V137	-0.474	-0.256	-0.409	-0.384	0.212
QPEOPLE	V138	-10.428	-1.376	-3.397	-3.001	0.928
QINFRA	V139	8.991	-6.064	-6.744	-8.070	3.604
POSAT4	V150	-0.196	-0.299	-0.183	-0.190	0.496

		PAYEQ5	RECOG7	SAPERF6	SCPERF7	UNITORG4
		V118	V119	V124	V125	V127
PAYEQ5	V118	0.875				
RECOG7	V119	0.256	0.478			
SAPERF6	V124	0.161	0.333	0.521		
SCPERF7	V125	0.113	0.255	0.260	0.355	
UNITORG4	V127	0.158	0.308	0.338	0.294	0.659
UNITDEV3	V128	0.245	0.346	0.403	0.282	0.620
VLEAD3	V130	0.260	0.410	0.479	0.253	0.494
ILEAD4	V131	0.225	0.333	0.410	0.235	0.475
ALEAD4	V132	0.236	0.355	0.459	0.240	0.490
BEHCULT6	V136	0.158	0.248	0.284	0.207	0.336
OBJCULT5	V137	0.107	0.224	0.279	0.226	0.363
QPEOPLE	V138	2.124	1.902	2.001	1.260	1.975
QINFRA	V139	2.349	4.134	4.718	4.016	5.752
POSAT4	V150	0.171	0.370	0.325	0.358	0.345

		UNITDEV3	VLEAD3	ILEAD4	ALEAD4	BEHCULT6
		V128	V130	V131	V132	V136
UNITDEV3	V128	1.008				
VLEAD3	V130	0.696	1.312			
ILEAD4	V131	0.638	1.003	1.052		
ALEAD4	V132	0.693	1.074	0.971	1.223	
BEHCULT6	V136	0.371	0.476	0.395	0.466	0.680
OBJCULT5	V137	0.446	0.389	0.429	0.425	0.359
QPEOPLE	V138	2.813	3.067	2.958	3.074	1.868
QINFRA	V139	6.118	7.173	6.752	7.456	5.145
POSAT4	V150	0.286	0.383	0.312	0.287	0.238

	OBJCULT5	QPEOPLE	QINFRA	POSAT4
	V137	V138	V139	V150
OBJCULT5 V137	0.605			
QPEOPLE V138	2.416	86.266		
QINFRA V139	4.874	62.459	263.240	
POSAT4 V150	0.257	2.225	6.409	1.183

BENTLER-WEEKS STRUCTURAL REPRESENTATION:

NUMBER OF DEPENDENT VARIABLES = 23
DEPENDENT V'S : 111 112 113 117 118 119 124 125 127 128
DEPENDENT V'S : 130 131 132 136 137 138 139 150
DEPENDENT F'S : 1 3 4 5 6

NUMBER OF INDEPENDENT VARIABLES = 27
INDEPENDENT V'S : 19
INDEPENDENT F'S : 7 8 9
INDEPENDENT E'S : 111 112 113 117 118 119 124 125 127 128
INDEPENDENT E'S : 130 131 132 136 137 138 139 150
INDEPENDENT D'S : 1 3 4 5 6

NUMBER OF FREE PARAMETERS = 54
NUMBER OF FIXED NONZERO PARAMETERS = 23

RESIDUAL COVARIANCE MATRIX (S-SIGMA) :

	YRSPRC	XHAUST7	MORAL4	HASSLE5	FULFIL6
	V19	V111	V112	V113	V117
YRSPRC V19	0.000				
XHAUST7 V111	-1.864	0.015			
MORAL4 V112	-1.281	0.054	0.026		
HASSLE5 V113	0.355	0.005	0.021	0.026	
FULFIL6 V117	-0.047	-0.055	0.128	0.116	0.020
PAYEQ5 V118	-1.874	-0.096	-0.130	-0.059	0.037
RECOG7 V119	-0.943	-0.030	-0.020	-0.008	0.031
SAPERF6 V124	-0.804	-0.017	0.003	-0.058	-0.016
SCPERF7 V125	-0.156	-0.024	0.043	0.016	0.082
UNITORG4 V127	-0.243	-0.058	-0.032	-0.122	0.046
UNITDEV3 V128	-1.793	0.044	-0.046	-0.105	-0.086
VLEAD3 V130	-1.266	0.032	0.067	-0.025	-0.106
ILEAD4 V131	-0.716	0.007	0.068	-0.033	-0.090
ALEAD4 V132	-1.175	0.086	0.091	-0.056	-0.147

BEHCULT6	V136	-0.710	0.019	-0.033	-0.091	-0.004
OBJCULT5	V137	-0.474	0.024	-0.037	-0.015	0.011
QPEOPLE	V138	-13.581	0.278	-1.203	-0.818	-0.972
QINFRA	V139	0.908	-1.825	-1.120	-2.474	-1.266
POSAT4	V150	-0.196	-0.099	0.083	0.074	0.118

	PAYEQ5	RECOG7	SAPERF6	SCPERF7	UNITORG4
	V118	V119	V124	V125	V127
PAYEQ5 V118	0.007				
RECOG7 V119	0.074	0.018			
SAPERF6 V124	-0.020	0.039	0.014		
SCPERF7 V125	-0.044	0.000	0.005	0.010	
UNITORG4 V127	-0.005	0.043	0.074	0.065	-0.000
UNITDEV3 V128	0.036	0.007	0.066	-0.011	0.002
VLEAD3 V130	0.041	0.053	0.124	-0.055	-0.051
ILEAD4 V131	0.025	0.009	0.087	-0.045	-0.021
ALEAD4 V132	0.023	0.008	0.113	-0.059	-0.040
BEHCULT6 V136	0.033	0.044	0.081	0.031	0.099
OBJCULT5 V137	-0.010	0.034	0.089	0.062	0.141
QPEOPLE V138	1.013	0.101	0.195	-0.308	0.357
QINFRA V139	-0.499	-0.482	0.087	-0.004	1.602
POSAT4 V150	-0.050	0.013	-0.031	0.048	0.186

	UNITDEV3	VLEAD3	ILEAD4	ALEAD4	BEHCULT6
	V128	V130	V131	V132	V136
UNITDEV3 V128	-0.000				
VLEAD3 V130	-0.000	0.000			
ILEAD4 V131	0.004	0.005	-0.000		
ALEAD4 V132	0.015	0.006	-0.001	-0.000	
BEHCULT6 V136	0.068	-0.001	-0.040	0.001	-0.000
OBJCULT5 V137	0.163	-0.058	0.023	-0.010	-0.001
QPEOPLE V138	0.745	0.890	0.978	0.957	0.625
QINFRA V139	0.815	1.592	1.674	2.029	1.956
POSAT4 V150	0.083	0.064	0.022	-0.023	-0.019

	OBJCULT5	QPEOPLE	QINFRA	POSAT4
	V137	V138	V139	V150
OBJCULT5 V137	-0.000			
QPEOPLE V138	1.253	0.518		
QINFRA V139	1.892	34.048	3.407	
POSAT4 V150	0.017	0.038	0.803	-0.000

AVERAGE ABSOLUTE RESIDUAL = 0.5430

AVERAGE OFF-DIAGONAL ABSOLUTE RESIDUAL = 0.5796

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

STANDARDIZED RESIDUAL MATRIX:

	YRSPRC V19	XHAUST7 V111	MORAL4 V112	HASSLE5 V113	FULFIL6 V117
YRSPRC V19	0.000				
XHAUST7 V111	-0.152	0.012			
MORAL4 V112	-0.089	0.038	0.016		
HASSLE5 V113	0.025	0.004	0.013	0.016	
FULFIL6 V117	-0.005	-0.058	0.116	0.108	0.027
PAYEQ5 V118	-0.180	-0.093	-0.107	-0.050	0.046
RECOG7 V119	-0.122	-0.039	-0.023	-0.009	0.052
SAPERF6 V124	-0.100	-0.022	0.004	-0.064	-0.026
SCPERF7 V125	-0.024	-0.037	0.056	0.021	0.162
UNITORG4 V127	-0.027	-0.064	-0.031	-0.119	0.067
UNITDEV3 V128	-0.160	0.039	-0.035	-0.083	-0.100
VLEAD3 V130	-0.099	0.025	0.045	-0.017	-0.108
ILEAD4 V131	-0.063	0.006	0.051	-0.025	-0.103
ALEAD4 V132	-0.095	0.070	0.063	-0.040	-0.156
BEHCULT6 V136	-0.077	0.021	-0.031	-0.088	-0.006
OBJCULT5 V137	-0.055	0.028	-0.037	-0.015	0.016
QPEOPLE V138	-0.131	0.027	-0.100	-0.070	-0.123
QINFRA V139	0.005	-0.102	-0.053	-0.121	-0.091
POSAT4 V150	-0.016	-0.083	0.059	0.054	0.128

	PAYEQ5 V118	RECOG7 V119	SAPERF6 V124	SCPERF7 V125	UNITORG4 V127
PAYEQ5 V118	0.008				
RECOG7 V119	0.115	0.037			
SAPERF6 V124	-0.030	0.079	0.026		
SCPERF7 V125	-0.079	0.001	0.011	0.029	
UNITORG4 V127	-0.007	0.077	0.126	0.134	-0.000
UNITDEV3 V128	0.039	0.010	0.091	-0.018	0.003
VLEAD3 V130	0.038	0.068	0.150	-0.081	-0.055
ILEAD4 V131	0.026	0.012	0.118	-0.074	-0.025
ALEAD4 V132	0.022	0.011	0.142	-0.090	-0.044
BEHCULT6 V136	0.043	0.077	0.136	0.064	0.148
OBJCULT5 V137	-0.014	0.063	0.159	0.133	0.224
QPEOPLE V138	0.117	0.016	0.029	-0.056	0.047
QINFRA V139	-0.033	-0.043	0.007	-0.000	0.122

POSAT4	V150	-0.049	0.017	-0.040	0.074	0.211

	UNITDEV3 V128	VLEAD3 V130	ILEAD4 V131	ALEAD4 V132	BEHCULT6 V136
UNITDEV3	V128	-0.000			
VLEAD3	V130	-0.000	0.000		
ILEAD4	V131	0.004	0.004	-0.000	
ALEAD4	V132	0.014	0.005	-0.000	-0.000
BEHCULT6	V136	0.082	-0.001	-0.047	0.002	-0.000
OBJCULT5	V137	0.209	-0.065	0.029	-0.011	-0.002
QPEOPLE	V138	0.080	0.084	0.103	0.093	0.082
QINFRA	V139	0.050	0.086	0.101	0.113	0.146
POSAT4	V150	0.076	0.051	0.020	-0.019	-0.021

	OBJCULT5 V137	QPEOPLE V138	QINFRA V139	POSAT4 V150
OBJCULT5	V137	-0.000		
QPEOPLE	V138	0.174	0.006	
QINFRA	V139	0.150	0.226	0.013
POSAT4	V150	0.020	0.004	0.045	-0.000

AVERAGE ABSOLUTE STANDARDIZED RESIDUAL = 0.0588

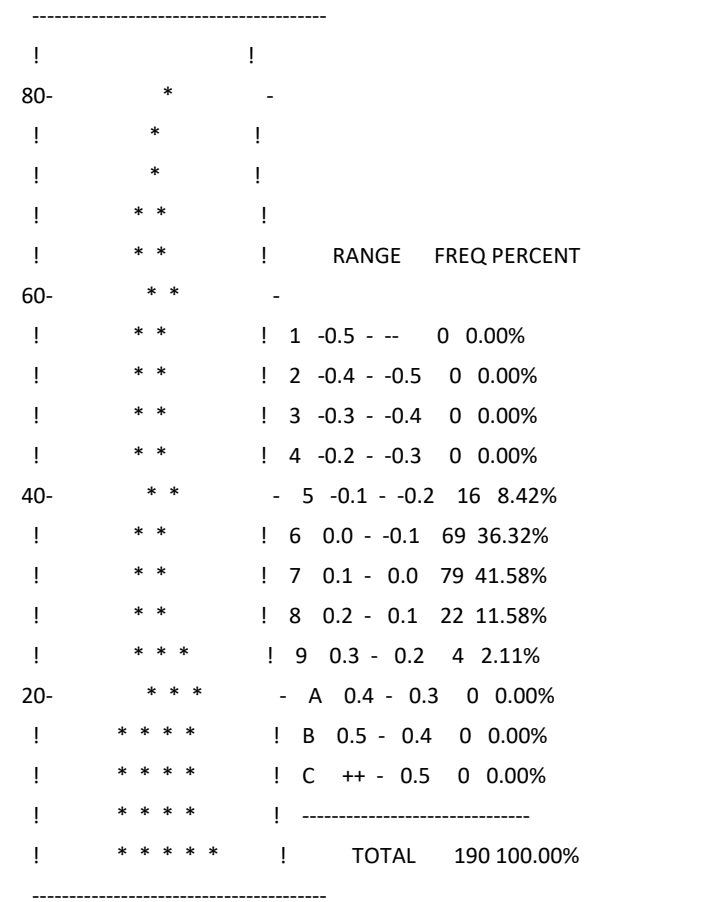
AVERAGE OFF-DIAGONAL ABSOLUTE STANDARDIZED RESIDUAL = 0.0643

LARGEST STANDARDIZED RESIDUALS:

NO.	PARAMETER	ESTIMATE	NO.	PARAMETER	ESTIMATE
1	V139,V138	0.226	11	V111,V19	-0.152
2	V137,V127	0.224	12	V130,V124	0.150
3	V150,V127	0.211	13	V139,V137	0.150
4	V137,V128	0.209	14	V136,V127	0.148
5	V118,V19	-0.180	15	V139,V136	0.146
6	V138,V137	0.174	16	V132,V124	0.142
7	V125,V117	0.162	17	V136,V124	0.136
8	V128,V19	-0.160	18	V127,V125	0.134
9	V137,V124	0.159	19	V137,V125	0.133
10	V132,V117	-0.156	20	V138,V19	-0.131

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

DISTRIBUTION OF STANDARDIZED RESIDUALS



MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

*** WARNING *** TEST RESULTS MAY NOT BE APPROPRIATE DUE TO CONDITION CODE

GOODNESS OF FIT SUMMARY FOR METHOD = ML

INDEPENDENCE MODEL CHI-SQUARE = 2763.438 ON 171 DEGREES OF FREEDOM

INDEPENDENCE AIC = 2421.438 INDEPENDENCE CAIC = 1659.578
MODEL AIC = 124.537 MODEL CAIC = -481.386

AKAIKE INFORMATION CRITERION (AIC) BASED ON LOG LIKELIHOOD = 13260.556
BAYESIAN INFORMATION CRITERION (BIC) BASED ON LOG LIKELIHOOD = 13447.144

CHI-SQUARE = 396.537 BASED ON 136 DEGREES OF FREEDOM
PROBABILITY VALUE FOR THE CHI-SQUARE STATISTIC IS 0.00000

THE NORMAL THEORY RLS CHI-SQUARE FOR THIS ML SOLUTION IS 435.364.

FIT INDICES

BENTLER-BONETT NORMED FIT INDEX = 0.857
BENTLER-BONETT NON-NORMED FIT INDEX = 0.874
COMPARATIVE FIT INDEX (CFI) = 0.900
BOLLEN'S (IFI) FIT INDEX = 0.901
MCDONALD'S (MFI) FIT INDEX = 0.573
JORESKOG-SORBOM'S GFI FIT INDEX = 0.836
JORESKOG-SORBOM'S AGFI FIT INDEX = 0.770
ROOT MEAN-SQUARE RESIDUAL (RMR) = 2.732
STANDARDIZED RMR = 0.078
ROOT MEAN-SQUARE ERROR OF APPROXIMATION (RMSEA) = 0.091
90% CONFIDENCE INTERVAL OF RMSEA (0.080, 0.101)

RELIABILITY COEFFICIENTS

CRONBACH'S ALPHA = 0.373
RELIABILITY COEFFICIENT RHO = 0.528

ITERATIVE SUMMARY

ITERATION	PARAMETER ABS CHANGE	ALPHA	FUNCTION
1	5.073081	0.50000	9.16980
2	4.438068	1.00000	4.13873
3	3.404450	1.00000	2.49331
4	0.505676	1.00000	1.81201
5	0.492947	1.00000	1.70497
6	0.190844	1.00000	1.70201
7	0.007040	1.00000	1.70189
8	0.003647	1.00000	1.70188
9	0.000571	1.00000	1.70188

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

MAXIMUM LIKELIHOOD SOLUTION (NORMAL DISTRIBUTION THEORY)

STANDARDIZED SOLUTION: R-SQUARED

XHAUST7 =V111= .730*F4 + .684 E111 .532
MORAL4 =V112= .824*F4 + .566 E112 .680
HASSLE5 =V113= .842*F4 + .539 E113 .710
FULFIL6 =V117= .681*F3 + .732 E117 .464
PAYEQ5 =V118= .359*F3 + .933 E118 .129
RECOG7 =V119= .800*F3 + .600 E119 .640
SAPERF6 =V124= .762*F1 + .648 E124 .581
SCPERF7 =V125= .802*F1 + .597 E125 .643
UNITORG4=V127= .856*F5 + .517 E127 .733
UNITDEV3=V128= .885*F5 + .466 E128 .783
VLEAD3 =V130= .915*F7 + .404 E130 .837
ILEAD4 =V131= .930*F7 + .369 E131 .864
ALEAD4 =V132= .921*F7 + .389 E132 .849
BEHCULT6=V136= .753*F6 + .658 E136 .567
OBJCULT5=V137= .746*F6 + .666 E137 .557
QPEOPLE =V138= .360*F1 + .933 E138 .129
QINFRA =V139= .529*F1 + .848 E139 .280
POSAT4 =V150= .381*F6 + .925 E150 .145
F1 =F1 = .996*F3 + .085*V19 + .000 D1 1.000
F3 =F3 = .440*V150 - .298*F4 + .466*F5
+ .469 D3 .780
F4 =F4 = -.216*F5 - .486*F6 + .776 D4 .398
F5 =F5 = .749*F7 + .663 D5 .560
F6 =F6 = .735*F7 + .678 D6 .540

E N D O F M E T H O D

1

today is 2017/02/03
Execution begins at 10:37:41
Execution ends at 10:37:41

Table E - 37. Fixed Models

Model Summary ALL												
Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.000	0.5872	0.000	0.003	232	0.959	0.067	1.851	0.065	0.003	0.066	0.972
Hassles	0.223	0.5187	0.223	66.273	231	0.000	-0.102	-2.393	0.018	-0.472	-0.085	0.690
Positive Attitude	0.451	0.4371	0.228	95.323	230	0.000	0.121	2.744	0.007	0.538	0.097	0.642
Unit Orgn	0.570	0.3876	0.119	63.485	229	0.000	0.150	2.881	0.004	0.660	0.102	0.465
Leader Actions	0.591	0.3789	0.021	11.671	228	0.001	0.123	2.660	0.008	0.526	0.094	0.590
Objective Culture	0.604	0.3735	0.013	7.592	227	0.006	0.131	2.873	0.004	0.550	0.102	0.607
Fulfill Equity	0.680	0.3364	0.076	53.887	226	0.000	0.257	5.379	0.000	0.650	0.191	0.550
Recognition	0.718	0.3169	0.037	29.699	225	0.000	0.281	5.450	0.000	0.718	0.193	0.472
h. Predictors: (Constant), Years Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items												
i. Dependent Variable: 13 item Sat Perf Duties												

Model Summary Cardiology												
Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.020	0.5333	0.020	2.541	125	0.113	0.133	2.654	0.009	0.141	0.130	0.945
Hassles	0.176	0.4910	0.156	23.428	124	0.000	-0.096	-1.657	0.100	-0.400	-0.081	0.703
Positive Attitude	0.424	0.4122	0.248	52.987	123	0.000	0.148	1.911	0.050	0.556	0.084	0.602
Unit Orgn	0.536	0.3713	0.112	29.566	122	0.000	0.098	1.369	0.174	0.605	0.067	0.467
Leader Actions	0.566	0.3607	0.030	8.248	121	0.005	0.056	0.837	0.404	0.509	0.041	0.534
Objective Culture	0.574	0.3586	0.009	2.430	120	0.122	0.165	2.672	0.009	0.470	0.130	0.621
Fulfill Equity	0.662	0.3207	0.088	31.037	119	0.000	0.301	4.568	0.000	0.667	0.223	0.548
Recognition	0.719	0.2939	0.057	23.728	118	0.000	0.335	4.871	0.000	0.704	0.238	0.505
h. Predictors: (Constant), Years Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items												
i. Dependent Variable: 13 item Sat Perf Duties												

Model Summary Stroke

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.016	0.6401	0.016	1.725	105	0.192	0.003	0.063	0.950	-0.127	0.003	0.931
Hassles	0.313	0.5375	0.297	44.913	104	0.000	-0.135	-2.103	0.038	-0.555	-0.106	0.618
Positive Attitude	0.509	0.4565	0.196	41.181	103	0.000	0.151	1.927	0.047	0.523	0.087	0.624
Unit Orgn	0.665	0.3791	0.156	47.349	102	0.000	0.228	2.918	0.004	0.742	0.148	0.419
Leader Actions	0.684	0.3697	0.020	6.245	101	0.014	0.172	2.640	0.010	0.559	0.134	0.604
Objective Culture	0.708	0.3574	0.024	8.057	100	0.005	0.163	2.088	0.039	0.648	0.106	0.544
Fulfill Equity	0.737	0.3408	0.029	11.009	99	0.001	0.197	2.696	0.008	0.645	0.136	0.477
Recognition	0.749	0.3345	0.012	4.776	98	0.031	0.179	2.185	0.031	0.732	0.111	0.380

h. Predictors: (Constant), Years Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items

i. Dependent Variable: 13 item Sat Perf Duties

Model Summary SHR

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.001	0.5692	0.001	0.058	113	0.810	0.018	0.344	0.732	-0.023	0.017	0.910
Hassles	0.183	0.5170	0.182	24.967	112	0.000	-0.090	-1.560	0.122	-0.426	-0.078	0.740
Positive Attitude	0.438	0.4307	0.255	50.413	111	0.000	0.148	1.883	0.052	0.552	0.094	0.637
Unit Orgn	0.535	0.3937	0.097	22.826	110	0.000	0.058	0.797	0.427	0.627	0.040	0.467
Leader Actions	0.584	0.3738	0.050	13.062	109	0.000	0.142	1.911	0.050	0.579	0.085	0.577
Objective Culture	0.607	0.3651	0.023	6.212	108	0.014	0.145	2.205	0.030	0.587	0.110	0.573
Fulfill Equity	0.677	0.3327	0.070	23.090	107	0.000	0.233	3.416	0.001	0.683	0.170	0.532
Recognition	0.737	0.3014	0.060	24.378	106	0.000	0.373	4.937	0.000	0.773	0.246	0.434

h. Predictors: (Constant), Years Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items

i. Dependent Variable: 13 item Sat Perf Duties

Model Summary CDHA												
Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.004	0.5988	0.004	0.462	117	0.498	0.095	1.859	0.066	0.063	0.094	0.981
Hassles	0.251	0.5215	0.247	38.263	116	0.000	-0.145	-2.357	0.020	-0.498	-0.119	0.669
Positive Attitude	0.461	0.4444	0.210	44.697	115	0.000	0.091	1.403	0.163	0.537	0.071	0.599
Unit Orgn	0.602	0.3833	0.142	40.578	114	0.000	0.258	3.506	0.001	0.676	0.177	0.468
Leader Actions	0.605	0.3837	0.003	0.812	113	0.370	0.163	1.691	0.054	0.458	0.085	0.566
Objective Culture	0.612	0.3820	0.007	2.003	112	0.160	0.070	1.020	0.310	0.541	0.051	0.543
Fulfill Equity	0.695	0.3401	0.083	30.292	111	0.000	0.304	4.423	0.000	0.610	0.223	0.538
Recognition	0.720	0.3272	0.025	9.892	110	0.002	0.216	3.145	0.002	0.663	0.159	0.541
h. Predictors: (Constant), Years Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items												
i. Dependent Variable: 13 item Sat Perf Duties												

Parsimonious Models

Model Summary ALL												
Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.000	0.5872	0.000	0.003	232	0.959	0.067	1.851	0.065	0.003	0.066	0.972
Hassles	0.223	0.5187	0.223	66.273	231	0.000	-0.102	-2.393	0.018	-0.472	-0.085	0.690
Positive Attitude	0.451	0.4371	0.228	95.323	230	0.000	0.121	2.744	0.007	0.538	0.097	0.642
Unit Orgn	0.570	0.3876	0.119	63.485	229	0.000	0.150	2.881	0.004	0.660	0.102	0.465
Leader Actions	0.591	0.3789	0.021	11.671	228	0.001	0.123	2.660	0.008	0.526	0.094	0.590
Objective Culture	0.604	0.3735	0.013	7.592	227	0.006	0.131	2.873	0.004	0.550	0.102	0.607
Fulfill Equity	0.680	0.3364	0.076	53.887	226	0.000	0.257	5.379	0.000	0.650	0.191	0.550
Recognition	0.718	0.3169	0.037	29.699	225	0.000	0.281	5.450	0.000	0.718	0.193	0.472
h. Predictors: (Constant), Years in Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items												
i. Dependent Variable: 13 item Sat Perf Duties												

Model Summary Dx Cardiology												
Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.020	0.5333	0.020	2.541	125	0.113	0.145	2.909	0.004	0.141	0.144	0.974
Hassles	0.176	0.4910	0.156	23.428	124	0.000	-0.128	-2.321	0.022	-0.400	-0.115	0.804
Objective Culture	0.307	0.4522	0.131	23.208	123	0.000	0.226	4.105	0.000	0.470	0.203	0.805
Fulfill Equity	0.602	0.3439	0.296	90.613	122	0.000	0.365	6.132	0.000	0.667	0.303	0.686
Recognition	0.705	0.2973	0.103	42.329	121	0.000	0.403	6.506	0.000	0.704	0.321	0.635
e. Predictors: (Constant), Years in Practice, Hassles 5 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items												
f. Dependent Variable: 13 item Sat Perf Duties												

Model Summary Stroke

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.016	0.6401	0.016	1.725	105	0.192	-0.012	-0.238	0.812	-0.127	-0.012	0.934
Hassles	0.313	0.5375	0.297	44.913	104	0.000	-0.115	-1.873	0.064	-0.555	-0.093	0.656
Unit Orgn	0.613	0.4052	0.300	79.985	103	0.000	0.235	3.064	0.003	0.742	0.153	0.422
Leader Actions	0.636	0.3950	0.023	6.405	102	0.013	0.209	3.222	0.002	0.559	0.160	0.591
Objective Culture	0.672	0.3769	0.036	11.023	101	0.001	0.146	1.850	0.057	0.648	0.092	0.534
Fulfill Equity	0.724	0.3471	0.052	19.048	100	0.000	0.254	3.669	0.000	0.645	0.183	0.516
Pay Equity	0.733	0.3435	0.008	3.144	99	0.079	-0.138	-2.475	0.015	0.215	-0.123	0.795
Recognition	0.757	0.3294	0.024	9.662	98	0.002	0.252	3.108	0.002	0.732	0.155	0.379

h. Predictors: (Constant), Years in Practice, Hassles 5 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Pay Equity 5 items, Recognition 7 items

i. Dependent Variable: 13 item Sat Perf Duties

Model Summary SHR

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.001	0.5692	0.001	0.058	113	0.810	0.032	0.638	0.525	-0.023	0.031	0.959
Positive Attitude	0.305	0.4767	0.305	49.126	112	0.000	0.168	1.994	0.046	0.552	0.088	0.663
Leader Values	0.533	0.3928	0.227	53.979	111	0.000	0.191	2.987	0.003	0.642	0.147	0.594
Objective Culture	0.611	0.3600	0.078	22.132	110	0.000	0.197	3.392	0.001	0.587	0.167	0.715
Fulfill Equity	0.678	0.3292	0.067	22.531	109	0.000	0.224	3.362	0.001	0.683	0.165	0.543
Recognition	0.739	0.2978	0.061	25.247	108	0.000	0.373	5.025	0.000	0.773	0.247	0.439

f. Predictors: (Constant), Years in Practice, Positive Attitude 4 items, Leader Values 3 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items

g. Dependent Variable: 13 item Sat Perf Duties

Model Summary CDHA

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.004	0.5988	0.004	0.462	117	0.498	0.122	2.377	0.019	0.063	0.119	0.950
Positive Attitude	0.293	0.5066	0.289	47.490	116	0.000	0.110	1.711	0.090	0.537	0.085	0.602
Hassles	0.461	0.4444	0.167	35.684	115	0.000	-0.161	-2.727	0.007	-0.498	-0.136	0.713
Unit Orgn	0.602	0.3833	0.142	40.578	114	0.000	0.214	2.679	0.009	0.676	0.134	0.391
Unit Develop	0.615	0.3788	0.013	3.743	113	0.056	0.194	2.557	0.012	0.556	0.128	0.433
Fulfill Equity	0.699	0.3364	0.084	31.284	112	0.000	0.300	4.498	0.000	0.610	0.224	0.561
Recognition	0.724	0.3237	0.025	9.953	111	0.002	0.214	3.155	0.002	0.663	0.157	0.542

g. Predictors: (Constant), Years in Practice, Positive Attitude 4 items, Hassles 5 items, Unit Orgn 4 items, Unit Develop 3 items, Fulfill Equity 6 items, Recognition 7 items

h. Dependent Variable: 13 item Sat Perf Duties

Table E-38 Model Summary for All Nurses and RNs Only

Fixed Model

Model Summary ALL

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.000	0.5872	0.000	0.003	232	0.959	0.067	1.851	0.065	0.003	0.066	0.972
Hassles	0.223	0.5187	0.223	66.273	231	0.000	-0.102	-2.393	0.018	-0.472	-0.085	0.690
Positive Attitude	0.451	0.4371	0.228	95.323	230	0.000	0.121	2.744	0.007	0.538	0.097	0.642
Unit Orgn	0.570	0.3876	0.119	63.485	229	0.000	0.150	2.881	0.004	0.660	0.102	0.465
Leader Actions	0.591	0.3789	0.021	11.671	228	0.001	0.123	2.660	0.008	0.526	0.094	0.590
Objective Culture	0.604	0.3735	0.013	7.592	227	0.006	0.131	2.873	0.004	0.550	0.102	0.607
Fulfill Equity	0.680	0.3364	0.076	53.887	226	0.000	0.257	5.379	0.000	0.650	0.191	0.550
Recognition	0.718	0.3169	0.037	29.699	225	0.000	0.281	5.450	0.000	0.718	0.193	0.472

h. Predictors: (Constant), Years in Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items

i. Dependent Variable: 13 item Sat Perf Duties

Model Summary for RNs only

Model	R Square	Std. Error of the Estimate	Change Statistics				Std Coeffs	t	Sig.	Correlations		Collinearity
Steps			R Square Change	F Change	df2	Sig. F Change	Beta			Zero-order	Part	Tolerance
Years Practice	0.009	0.5694	0.009	1.710	191	0.193	0.111	2.927	0.004	0.094	0.110	0.979
Hassles	0.227	0.5042	0.218	53.652	190	0.000	-0.098	-2.186	0.030	-0.466	-0.082	0.697
Positive Attitude	0.455	0.4246	0.228	78.862	189	0.000	0.099	2.107	0.036	0.546	0.079	0.629
Unit Orgn	0.548	0.3876	0.093	38.852	188	0.000	0.086	1.920	0.054	0.605	0.053	0.493
Leader Actions	0.576	0.3765	0.028	12.183	187	0.001	0.120	2.330	0.021	0.536	0.087	0.529
Objective Culture	0.585	0.3733	0.010	4.264	186	0.040	0.134	2.873	0.005	0.498	0.108	0.649
Fulfill Equity	0.692	0.3228	0.106	63.774	185	0.000	0.310	6.009	0.000	0.690	0.225	0.528
Recognition	0.742	0.2960	0.050	35.938	184	0.000	0.327	5.995	0.000	0.739	0.225	0.473

h. Predictors: (Constant), Years in Practice, Hassles 5 items, Positive Attitude 4 items, Unit Orgn 4 items, Leader Actions 4 items, Objective Culture 5 items, Fulfill Equity 6 items, Recognition 7 items

i. Dependent Variable: 13 item Sat Perf Duties

Table E-39. Means and Standard Deviations of All Nurses and RNs only (All RNs, Separate for Cardiology and Stroke units and SHR and CDHA)

Descriptives							
	All Nurses			RNs only			
Variables	Mean	Std Dev	N	Mean	Std Dev	N	Diff
Sat Perf Duties	4.11	0.6	234	4.08	0.6	193	0.025
Years in Practice	14.10	11.1	234	14.15	11.1	193	-0.047
Quality of People	78.51	9.3	234	78.21	9.1	193	0.295
Quality Inftrastructure	61.27	16.2	234	60.16	16.4	193	1.112
Positive Attitude	4.24	1.1	234	4.23	1.1	193	0.012
Exhaustion	3.32	1.1	234	3.35	1.1	193	-0.029
Hassles	4.01	1.3	234	4.04	1.2	193	-0.032
Moral D 4 items	2.99	1.3	234	2.98	1.3	193	0.010
Unit Orgn	4.14	0.8	234	4.12	0.8	193	0.025
Unit Develop	4.08	1.0	234	4.01	1.0	193	0.062
Leader Values	3.39	1.1	234	3.32	1.2	193	0.070
Leader Integrity	3.80	1.0	234	3.73	1.0	193	0.073
Leader Actions	3.45	1.1	234	3.39	1.1	193	0.061
Behavior Culture	2.95	0.8	234	2.93	0.8	193	0.024
Objective Culture	3.81	0.8	234	3.79	0.8	193	0.022
Fulfill	4.16	0.9	234	4.20	0.8	193	-0.044
Pay Equity	2.93	0.9	234	3.02	0.9	193	-0.093
Recognition	3.96	0.7	234	3.97	0.7	193	-0.005

Descriptives							
	Cardiology			**Stroke**			
Variables	Mean	Std Dev	N	Mean	Std Dev	N	Diff
Sat Perf Duties	4.11	0.5	127	4.11	0.6	107	0.005
Years in Practice	13.55	10.9	127	14.75	11.4	107	-1.205
Quality of People	77.49	8.7	127	79.71	9.9	107	-2.229
Quality Inftrastructure	60.58	16.1	127	62.09	16.4	107	-1.510
Positive Attitude	4.20	1.0	127	4.29	1.2	107	-0.087
Exhaustion	3.50	1.1	127	3.11	1.1	107	0.392
Hassles	4.08	1.3	127	3.92	1.2	107	0.155
Moral D 4 items	3.05	1.3	127	2.92	1.3	107	0.124
Unit Orgn	3.99	0.8	127	4.32	0.8	107	-0.323
Unit Develop	3.97	1.0	127	4.20	1.0	107	-0.228
Leader Values	3.25	1.1	127	3.56	1.1	107	-0.312
Leader Integrity	3.58	1.1	127	4.05	0.9	107	-0.467
Leader Actions	3.34	1.1	127	3.58	1.1	107	-0.237
Behavior Culture	2.90	0.8	127	3.01	0.9	107	-0.116
Objective Culture	3.74	0.8	127	3.90	0.8	107	-0.161
Fulfill	4.26	0.8	127	4.04	0.9	107	0.224
Pay Equity	3.05	0.9	127	2.79	1.0	107	0.262
Recognition	4.00	0.6	127	3.92	0.7	107	0.085

Descriptive Statistics							
	SHR			CDHA			
Variables	Mean	Std Dev	N	Mean	Std Dev	N	Diff
Sat Perf Duties	4.18	0.6	115	4.04	0.6	119	0.146
Years in Practice	12.17	10.1	115	15.97	11.8	119	-3.801
Quality of People	79.02	9.3	115	78.01	9.3	119	1.015
Quality Inftrastructure	62.25	15.2	115	60.32	17.2	119	1.924
Positive Attitude	4.23	1.0	115	4.25	1.2	119	-0.020
Exhaustion	3.10	1.1	115	3.54	1.1	119	-0.443
Hassles	3.69	1.3	115	4.31	1.1	119	-0.617
Moral D 4 items	2.82	1.3	115	3.15	1.3	119	-0.332
Unit Orgn	4.33	0.8	115	3.96	0.8	119	0.370
Unit Develop	4.35	0.9	115	3.81	1.0	119	0.547
Leader Values	3.61	1.1	115	3.19	1.1	119	0.415
Leader Integrity	4.02	1.0	115	3.58	1.1	119	0.440
Leader Actions	3.67	1.1	115	3.23	1.1	119	0.443
Behavior Culture	2.94	0.8	115	2.96	0.8	119	-0.012
Objective Culture	3.78	0.7	115	3.84	0.9	119	-0.058
Fulfill	4.31	0.8	115	4.01	0.9	119	0.306
Pay Equity	3.12	0.8	115	2.75	1.0	119	0.369
Recognition	4.14	0.7	115	3.80	0.7	119	0.338

Table E-40 SPD with Years in Practice

Descriptives

13 item Sat Perf Duties

Career Stage	N	Mean	Std Dev	Std. Error	95% C.I. for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
1 to 3	52	4.1	0.5	0.1	4.0	4.3	2.5	5.0
4 to 6	26	4.0	0.6	0.1	3.8	4.3	2.5	5.0
7 to 9	28	4.1	0.5	0.1	3.9	4.3	2.8	5.0
10 to 19	**50**	**4.2**	**0.6**	**0.1**	**4.0**	**4.4**	**2.3**	**5.3**
20 to 29	46	4.0	0.7	0.1	3.8	4.2	2.0	5.3
30 plus	**31**	**4.3**	**0.4**	**0.1**	**4.1**	**4.4**	**3.5**	**5.3**
Total	233	4.1	0.6	0.0	4.0	4.2	2.0	5.3

13 item Sat Perf Duties

	Years in Practice	N	Subset for alpha = 0.05
			1
Scheffe[a,b]	20 to 29	46	3.978
	4 to 6	26	4.036
	7 to 9	28	4.121
	1 to 3	52	4.127
	10 to 19	50	4.168
	30 plus	31	4.253
	Sig.		0.559

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 35.841.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.